Symbol FormBuilder

User Guide

symbol®
The Enterprise Mobility Company ™

Symbol FormBuilder

User Guide

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symbol®
The Enterprise Mobility Company ™

Revision History

Changes to the original manual are listed below:

Change	Date	Description
-01 Rev 1	7/2006	BETA
-01 Rev A	11/2006	Symbol initial release. (HPCM 940366-001, rev. F)

Table of Contents

Glossary

About This Guide

Introduction

This guide should be used by individuals tasked with developing or maintaining customer-specific screens. Symbol understands that each multi-lane merchant has specific graphic needs. To this end, we have endeavored to build a robust tool capable of giving you the power to implement multiple images and logo branding beyond the standard POS screens.

With FormBuilder, you will be able to create customized components to display on the multi-lane terminals. These images can include buttons, text boxes, special messages, reminders, and appreciation screens.

| ✓ | **NOTE** | Screens and windows pictured in this guide are samples and can differ from actual screens. |

| ⚠ | **IMPORTANT** | This guide includes information about FormBuilder, a Symbol OEM product from Hypercom Corporation. |
| | | Any references in this guide to Hypercom Corporation, Hypercom logo, Hypercom file names and file paths, Hypercom software and terminals reflect hardware and software manufactured by Hypercom Corporation for Symbol Technologies, Inc. |

Using This Document

The assumption has been made that the user has a basic knowledge of Microsoft Windows-based applications and processes. It does not assume any prior experience with the screen building process, and will help assist the user in starting a new project and finalizing it for transfer to the Symbol Multi-Lane terminal.

Chapter Descriptions

Topics covered in this guide are as follows:

- Chapter 1, Getting Started provides information about creating customized components to display on the multi-lane terminals.
- Chapter 2, Using FormBuilder provides the information about FormBuilder tools how to navigate FormBuilder to manipulate the various screen elements and commands at a basic level.

- Chapter 3, Security Features provides the FormBuilder security features that allow the user to securely sign the project.

- Appendix A, Reference Information provides reference information used by the developers of the base application programs.

Notational Conventions

The following conventions are used in this document:

- The term "FormBuilder" in this guide refers to software.

- *Italics* are used to highlight the following:
  - Chapters and sections in this and related documents
  - Drop-down list and list box names
  - Check box and radio button names
  - Icons on a screen.

- **Bold** text is used to highlight the following:
  - Names of windows
  - Dialog box components.

- bullets (•) indicate:
  - Action items
  - Lists of alternatives
  - Lists of required steps that are not necessarily sequential

- Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.

- Special icons:

  NOTE   Notes contain neutral or positive information supplementing the main text. It is often information that applies only to special cases.

  IMPORTANT Important statements draw attention to information crucial to using the product successfully. Pay special attention to Important statements.

  CAUTION   Cautions advise that a negative result, such as a loss of data, may occur.

  WARNING!   **Warnings provide information that is essential to the safety of the user, the equipment, or both. Failure to do as instructed may result in physical damage.**

Related Documents

For the latest version of this and all payment solution guides go to:http://www.symbol.com/manuals.

Service Information

For service information, warranty information, technical assistance or problems with the equipment, contact the regional Symbol Global Customer Interaction Center. Before calling, have the model number, serial number and several bar code symbols at hand.

Call the Global Customer Interaction Center from a phone near the scanning equipment so that the service person can try to troubleshoot the problem. If the equipment is found to be working properly and the problem is reading bar codes, the Support Center will request samples of the bar codes for analysis at our plant.

If the problem cannot be solved over the phone, it may be necessary to return the equipment for servicing. If that is necessary, the Global Customer Interaction Center will provide specific directions.

✓ **NOTE** Symbol Technologies is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty. If the original shipping container was not kept, contact Symbol to have another sent.

If the Symbol product was purchased from a Symbol Business Partner, contact that Business Partner for service.

Global Customer Interaction Center

The addresses and telephone numbers below are provided for you convenience. However, this information can change due to telephone provider updates. For the most up-to-date contact number information, visit: www.symbol.com/contactsupport for a Customer Interaction Center in your area.

Country/Region	Address	Telephone
United States	Symbol Technologies, Inc. One Symbol Plaza Holtsville, New York 11742-1300	1-800-653-5350
Canada	Symbol Technologies Canada, Inc. 5180 Orbitor Drive Mississauga, Ontario, Canada L4W 5L9	1-866-416-8545 (Inside Canada) 905-629-7226 (Outside Canada)
United Kingdom	Symbol Technologies Symbol Place Winnersh Triangle, Berkshire RG41 5TP United Kingdom	0800 328 2424 (Inside UK) +44 118 945 7529 (Outside UK)
Asia/Pacific	Symbol Technologies Asia, Inc. (Singapore Branch) 230 Victoria Street #12-06/10 Bugis Junction Office Tower Singapore 188024	Tel: +65-6796-9600 Fax: +65-6337-6488
Australia	Symbol Technologies Pty. Ltd. 432 St. Kilda Road Melbourne, Victoria 3004	1-800-672-906 (Inside Australia) +61-3-9866-6044 (Outside Australia)

Country/Region	Address	Telephone
Österreich/Austria	Symbol Technologies Austria GmbH Prinz-Eugen Strasse 70 / 2.Haus 1040 Vienna, Austria 01-5055794-0 (Inside Austria)	+43-1-5055794-0 (Outside Austria)
Danmark/Denmark	Symbol Technologies AS Dr. Neergaardsvej 3 2970 Hørsholm	7020-1718 (Inside Denmark) +45-7020-1718 (Outside Denmark)
Europe/Mid-East Distributor Operations		Contact your local distributor or call +44 118 945 7360
Suomi/Finland	Oy Symbol Technologies Kaupintie 8 A 6 FIN-00440 Helsinki, Finland	9 5407 580 (Inside Finland) +358 9 5407 580 (Outside Finland)
France	Symbol Technologies France Centre d'Affaire d'Antony 3 Rue de la Renaissance 92184 Antony Cedex, France	01-40-96-52-21 (Inside France) +33-1-40-96-52-50 (Outside France)
Deutschland/Germany	Symbol Technologies GmbH Waldstrasse 66 D-63128 Dietzenbach, Germany	6074-49020 (Inside Germany) +49-6074-49020 (Outside Germany)
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Country/Region	Address	Telephone
Norge/Norway	Symbol's registered and mailing address: Symbol Technologies Norway Hoybratenveien 35 C N-1055 OSLO, Norway Symbol's repair depot and shipping address: Symbol Technologies Norway Enebakkveien 123 N-0680 OSLO, Norway	+47 2232 4375
South Africa	Symbol Technologies Africa Inc. Block B2 Rutherford Estate 1 Scott Street Waverly 2090 Johannesburg Republic of South Africa	11-809 5311 (Inside South Africa) +27-11-809 5311 (Outside South Africa)
España/Spain	Symbol Technologies S.L. Avenida de Bruselas, 22 Edificio Sauce Alcobendas, Madrid 28108 Spain	91 324 40 00 (Inside Spain) +34 91 324 40 00 (Outside Spain) Fax: +34.91.324.4010
Sverige/Sweden	"Letter" address: Symbol Technologies AB Box 1354 S-171 26 SOLNA Sweden Visit/shipping address: Symbol Technologies AB Solna Strandväg 78 S-171 54 SOLNA Sweden	Switchboard: 08 445 29 00 (domestic) Call Center: +46 8 445 29 29 (international) Support E-Mail: Sweden.Support@se.symbol.com

Getting Started

Introduction

FormBuilder is a Windows-based tool used to create images for use on Symbol Multi-Lane terminals.

This guide should be used by individuals tasked with developing or maintaining customer-specific screens. Symbol understands that each multi-lane merchant has specific graphic needs. To this end, we have endeavored to build a robust tool capable of giving you the power to implement multiple images and logo branding beyond the standard POS screens.

With FormBuilder, you are able to create customized components to display on the multi-lane terminals. These images can include buttons, text boxes, special messages, reminders, and appreciation screens.

Installing FormBuilder

The FormBuilder application is found on the FPE32 Developer's Toolkit CD. FormBuilder can be started by double clicking the FormBuilder icon that is installed on the desktop.

Figure 1-1   *FormBuilder icon*

Project Flow - Creation to Deployment

```
┌─────────────────────────────────────┐
│            FormBuilder              │
│                                     │
│  Custom merchant projects and forms │
│  are created in FormBuilder.        │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│            Packinglist              │
│                                     │
│  The packinglist is created when the│
│  project is compiled in FormBuilder.│
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│        Download Packinglist         │
│                                     │
│  The packinglist is downloaded into │
│  a terminal using Symbol Terminal   │
│  Management Services (HTMS),        │
│  FPELoader, or FPE-Sim.             │
└─────────────────────────────────────┘
                  │
                  ▼
┌─────────────────────────────────────┐
│        Multi-Lane Terminals         │
│                                     │
│  The completed forms are downloaded │
│  into live multi-lane terminals.    │
└─────────────────────────────────────┘
```

Figure 1-2   *Project Flow*

Using FormBuilder

Introduction

In this chapter, users learn the basics of FormBuilder and how to manipulate the various screen elements and commands.
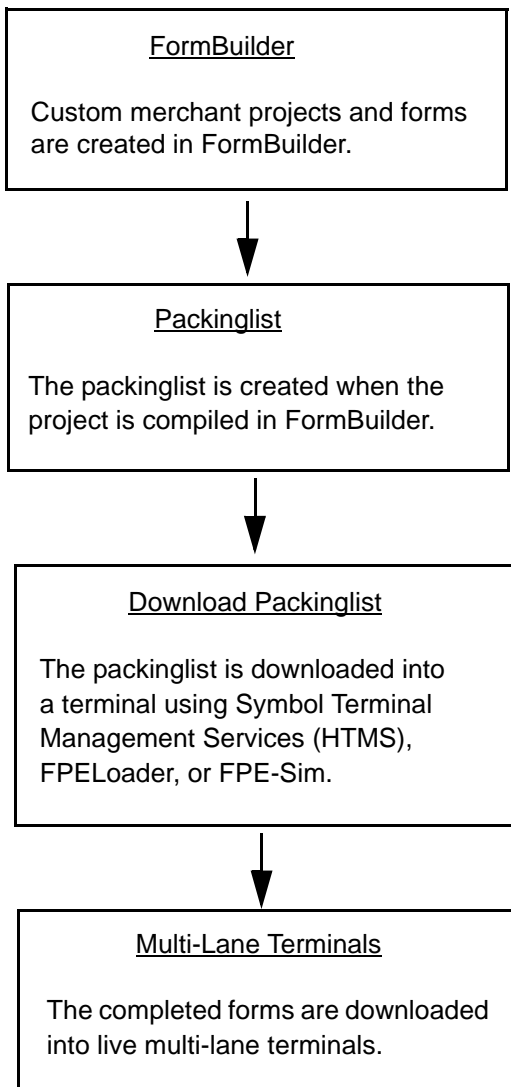
Starting the Application

The Formbuilder application is found on the FPE32 Developer's Toolkit CD. FormBuilder can be started by double clicking the FormBuilder icon that is installed on the desktop.

Figure 2-1 *FormBuilder icon*

By default, FormBuilder is installed under **Start** > **Program Files** > **Hypercom** > **FormBuilder**.

Demo projects are included on the FPE32 Developer's Toolkit CD. Select the demo project for your terminal type and copy and paste the folder into the FormBuilder directory on your drive. The .vsp file can then be opened from within FormBuilder. Double click the .vsp file to open the project.

> **NOTE** If you are using Windows 2000, right click the demo_project folder for your terminal type. Select **Properties**. Uncheck the read-only box. Click **Apply** and select **Apply changes to this folder, subfolders and files**.

The FormBuilder opening window appears:
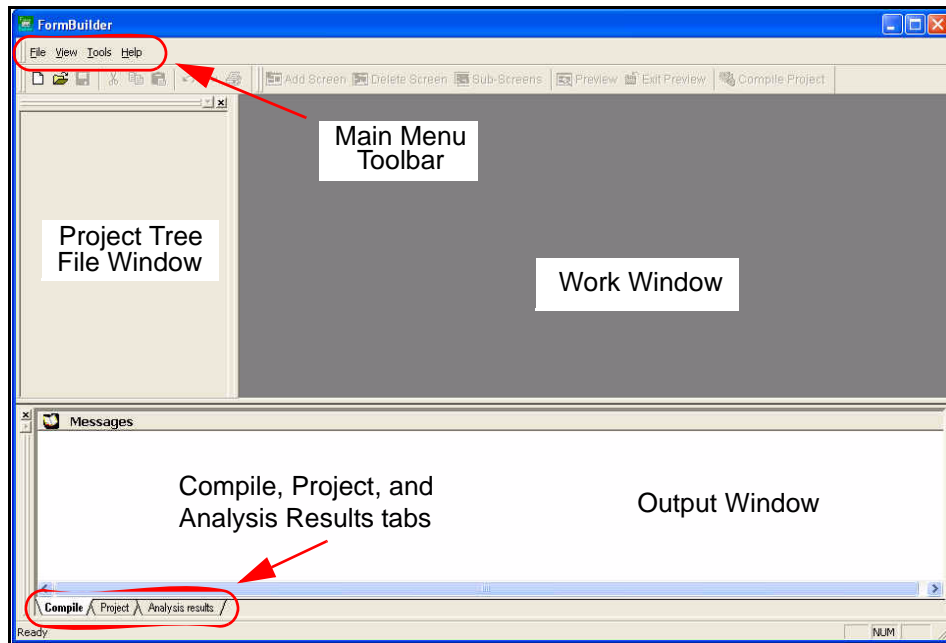
Figure 2-2   *FormBuilder Opening Window*

Navigating within the FormBuilder application is similar to navigating in any Windows®-based program. Choices and commands can be found under the pull down menus in the main menu toolbar.

The FormBuilder main window is divided into several sections. Each section assists in navigating and constructing project information:

The **Project File Tree Window** is where a user navigates through the project.

The **Work Window** should be considered a canvas. It is here that the user places elements to create a screen. The dotted area of a new screen is the blank canvas, and it simulates the terminal screen.

The **Output Window** displays important messages regarding the project. File paths or error messages are displayed here.

Creating a New Project

To create a new project:

1. From the FormBuilder main window, select **File** > **New Project**. The Create New Project dialog box appears.
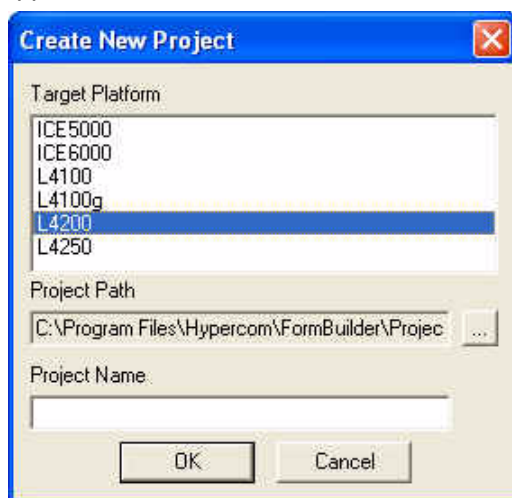
Figure 2-3 *Create New Project dialog box*

2. Select the **Target Platform** to identify the type of terminal the new project is designed for.

3. Select the project path to identify where the project files will be stored.

4. Type the **Project Name**, using up to 7 characters.

    NOTE Do not use any spaces in your project name.

5. Click **OK** to save the information.

    NOTE FormBuilder automatically saves changes to a project when a screen is closed and when the project is closed.

Screens

This section shows the user how to add screens and sub-screens, insert screens created for other projects, and analyze screen results.

Adding a Screen

The project will have a new screen for every step in the payment processing procedure. For example, a gift card purchase could have four screens:

1. Welcome, please swipe your card.
2. Please select your payment type.
3. Processing.
4. Approved. Thank you.

The following Step-by-Step demonstrates the initial creation of a set of screen files.

To add a screen:

1. From the FormBuilder main window with your project open, click the **Add Screen** button on toolbar. The Add Screen dialog box appears.

Figure 2-4   *Add Screen dialog box*

2. Type a new screen name, then click **OK,** or click **OK** to accept the default name.

> *NOTE*   Depending on what software (FPE, SCAT, or EFT) you are using to download your project to the terminals, certain screens must have specific names. See *Pre-Defined Screen Names on page A-11* for a list of the screen names that must be used for the terminals to process correctly.

Importing Screens

FormBuilder allows the user to insert screens created for other projects.

To insert a screen:

1. **Open** the project you are modifying.

2. Select **Project** > **Import > Screen** from the main menu bar. The Open dialog box displays.

Figure 2-5   *Open dialog box*

1. Browse to the project and screen to be inserted into the current project and click **Open**. A screen similar to the following displays:

Figure 2-6   *Insert Screen box*

1. Enter the name of the screen and click **OK**. The newly imported screen is added to the bottom of the list of screens in the Project File Tree Window.
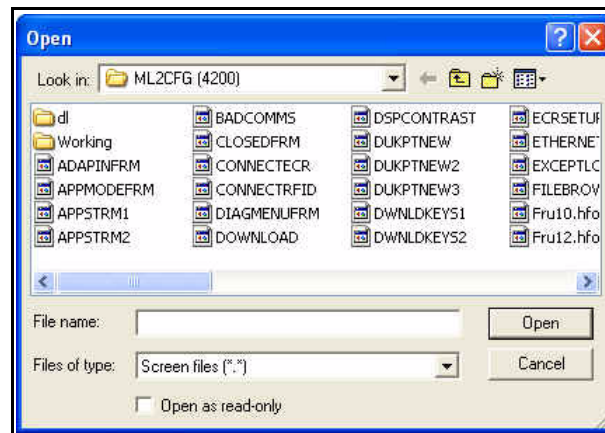
> ✓ *NOTE* Depending on what software (FPE, SCAT, or EFT) you are using to download your project to the terminals, certain screens must have specific names. See *Pre-Defined Screen Names on page A-11* for a list of the screen names that must be used for the terminals to process correctly.

Creating Sub-Screens

Sub-screens are screens that have repetitive graphics or messages that can be used on multiple screens. Using sub-screens can significantly shorten the project creation time and enhance the final project.

An example of a sub-screen would be a background screen that shows an on-screen logo. Rather than adding that image to every screen in the project, a sub-screen can be created and then applied to one or more screens.
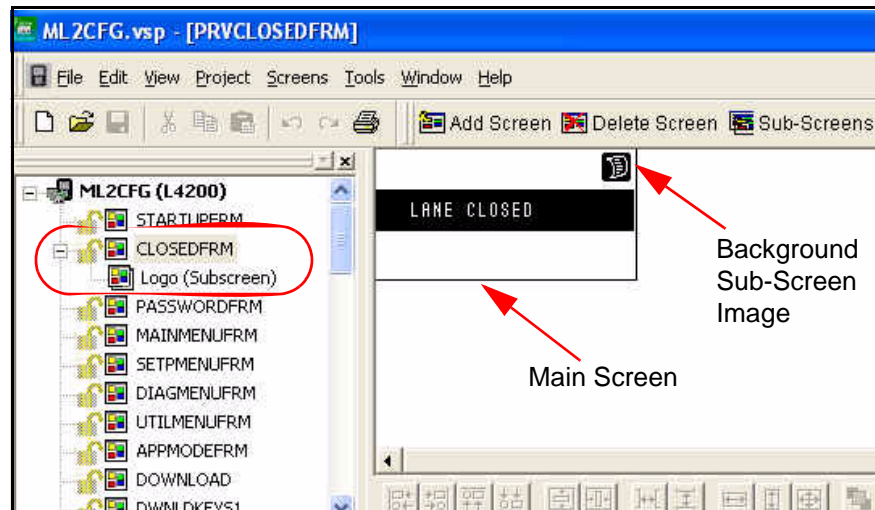
Figure 2-7   *Main screen with background sub-screen*

NOTE   You can create more than one sub-screen for different applications. Multi-images can also be used on sub-screens.

To create and apply a sub-screen:

1.   Select the screen name that is to have a sub-screen added from the list of screens.

2.   Right click the screen name and select **Sub-Screen**. A dialog box similar to the following opens:

Figure 2-8   *Selecting a Sub-Screen*

3. Use the pull down to browse to the appropriate sub-screen and click **OK**. The sub-screen is now shown nested under the main screen image in the list of screens.
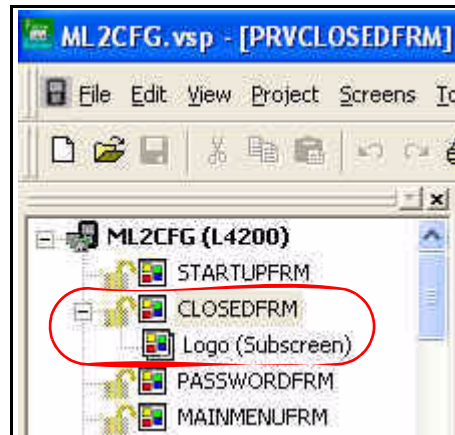

Figure 2-9   *Main Screen Image with a Sub-Screen*

Alignment Tools

At the bottom of the Work Window are tools used to align, resize, or nudge screen elements. These tools become available when the user selects a screen element. See *Figure 2-10* for the location of the alignment tools.
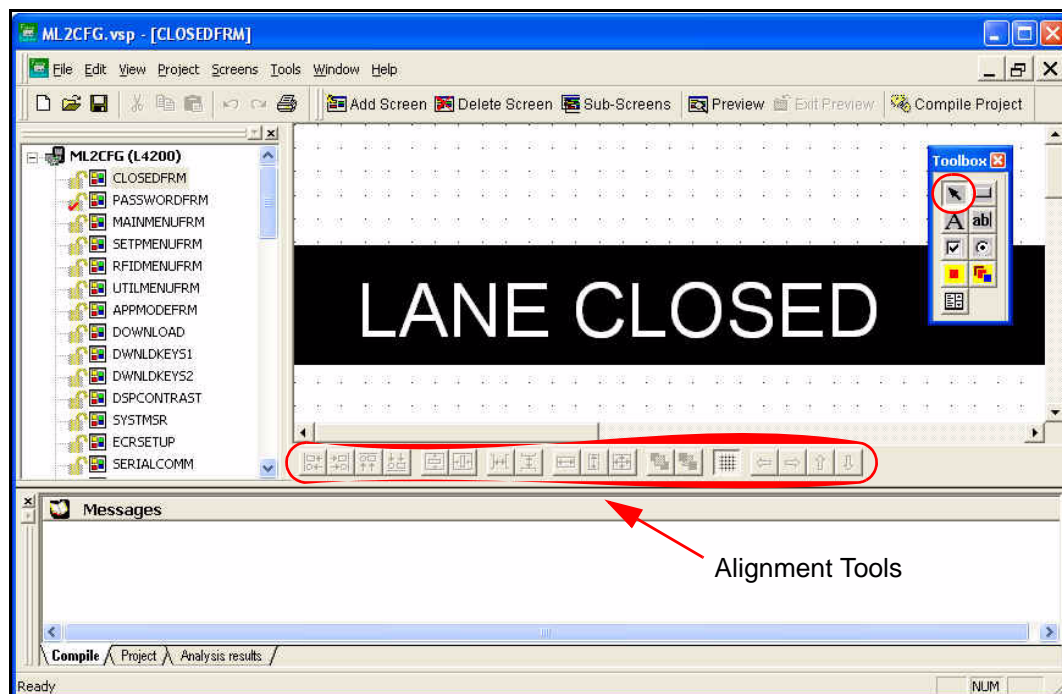
Figure 2-10   *Alignment Tools*

To grab more than one screen element, click the Select tool from the Toolbox, hold down the **Control key** [CTRL] and click on each screen element you want to select. A dark border surrounds selected elements.

The Alignment Tools should be highlighted as shown below.
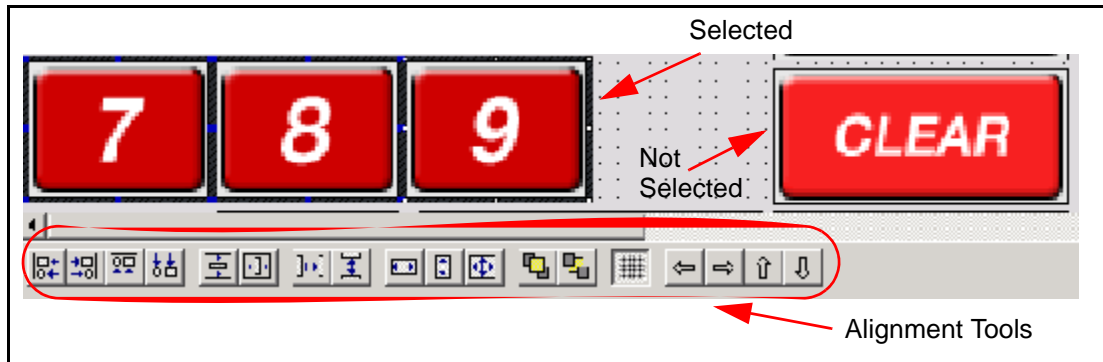
Figure 2-11   *Multiple Element Alignment Tools*

✓   ***NOTE***   The Alignment Tools have a roll over menu that describes what each button does.

Toolbox

The Toolbox is a palette of options that allows the user to place elements into the Work Window. The toolbox displays when an existing project is opened or a new project is started (*Figure 2-12*).

⚠   ***IMPORTANT***   Supported toolbox controls vary depending on the terminal type. For example, the Virtual Keyboard toolbox control is only available for use with touch screen terminals.
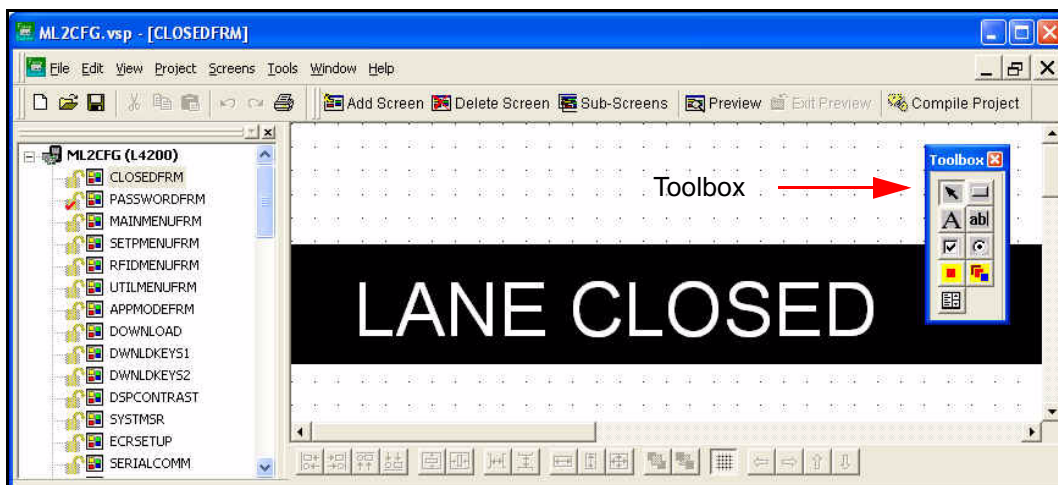
Figure 2-12   *Toolbox*

See *Figure 2-13* for a closer view of the toolbox controls.
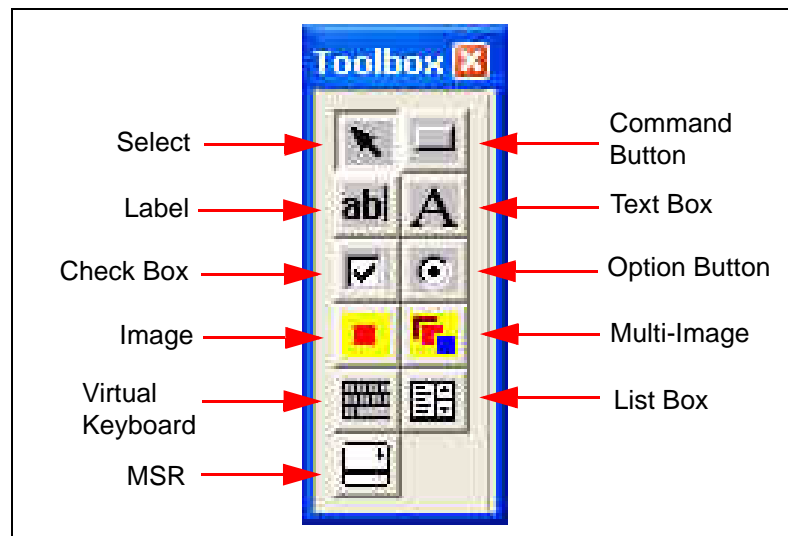
Figure 2-13   *Toolbox Controls*

Available toolbox controls include:

- **Select**: moves components
- **Command Button**: creates and defines a command button
- **Label**: creates and defines a label for displaying static (non-changing) information
- **Text Box**: creates and defines an edit field for entry of alpha numeric, amount, masked, numeric, PIN, or signature data
- **Check Box**: creates and defines a check box
- **Option Button**: creates and defines an option button
- **Image**: creates and defines an image
- **Multi-Image**: creates sequential images
- **Virtual Keyboard**: creates a virtual keyboard for entry of alpha, alpha-numeric, and numeric characters
- **List Box**: creates and defines a list box to scroll receipt items
- **MSR**: configures Magnetic Stripe Reader (MSR) service properties

Command Buttons

A command button can be used to either prompt customers to an action or to receive certain functional commands from the screens. Command buttons present the customer with choices.

In the example below, the command buttons allow the customer to choose a tender type. When a command button is pressed, return code is sent.
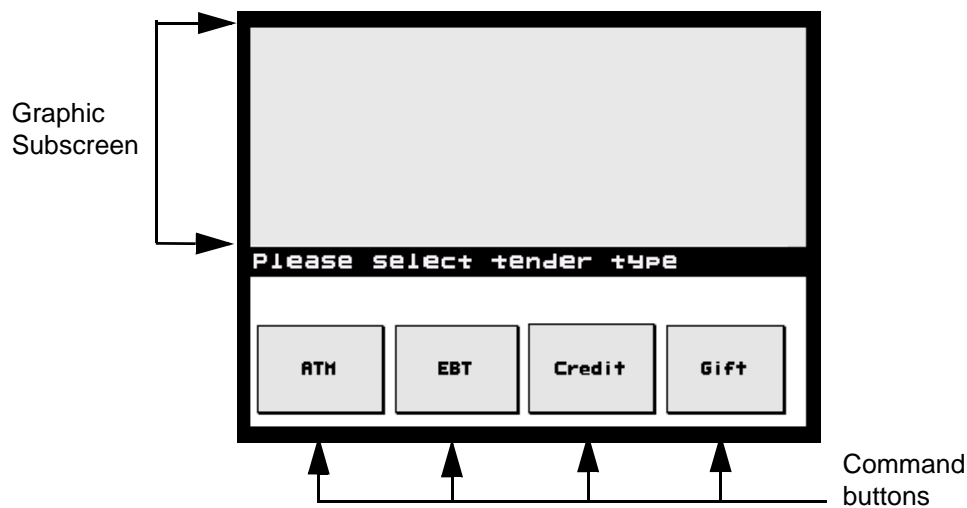
Figure 2-14   *Command buttons on Tender Type form*

To create and configure a Command Button:

1.   Display a screen in the work window.

2.   Click the **Command Button** icon on the toolbox as shown in *Figure 2-15*.
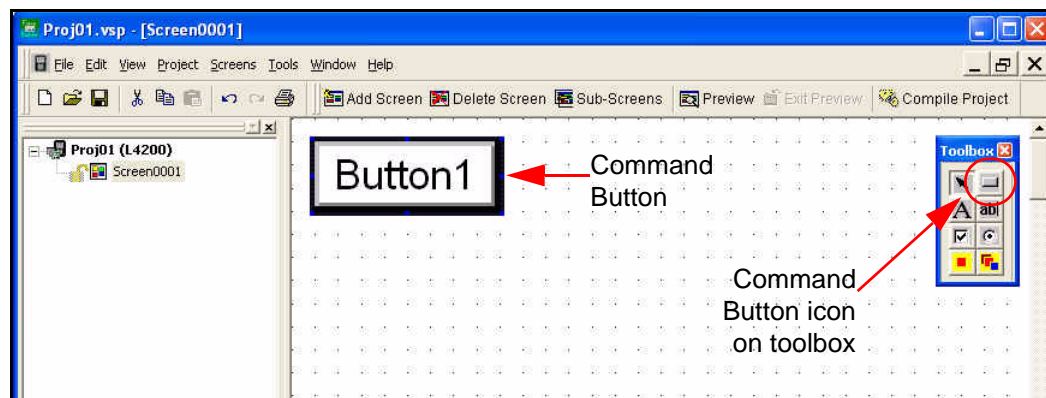
Figure 2-15   *Command Button*

3.   Place the cursor over the desired start location for the button. Click and hold the left mouse key, drag the cursor to the desired end location for the button, then release the mouse key. An outline of the button is drawn as the cursor moves.

✓   **NOTE**   If a screen contains more than one command button, each command button must have a different Return Key. Command Buttons can be used to select amounts, such as 5.00, 10.00, 20.00, and Other. The button labeled *Other* must be a **Function 10**. See *Return Key Codes on page A-4*.

4.   Double click the Command Button to open the properties box to configure the look and action of the button (*Figure 2-16*).

Figure 2-16   *Command Button Properties Box*

5.   To add a graphic to a Command Button, set the Button Type property to `Picture` and add the graphic to the Up Picture or Down Picture properties.

Labels

A label is similar to a text box. It displays static, read-only text. An example would be a label announcing that the lane is closed.

To create and configure a Label:

1. Display a screen in the work window.

    Click the **Label** icon on the toolbox as shown in *Figure 2-17*.
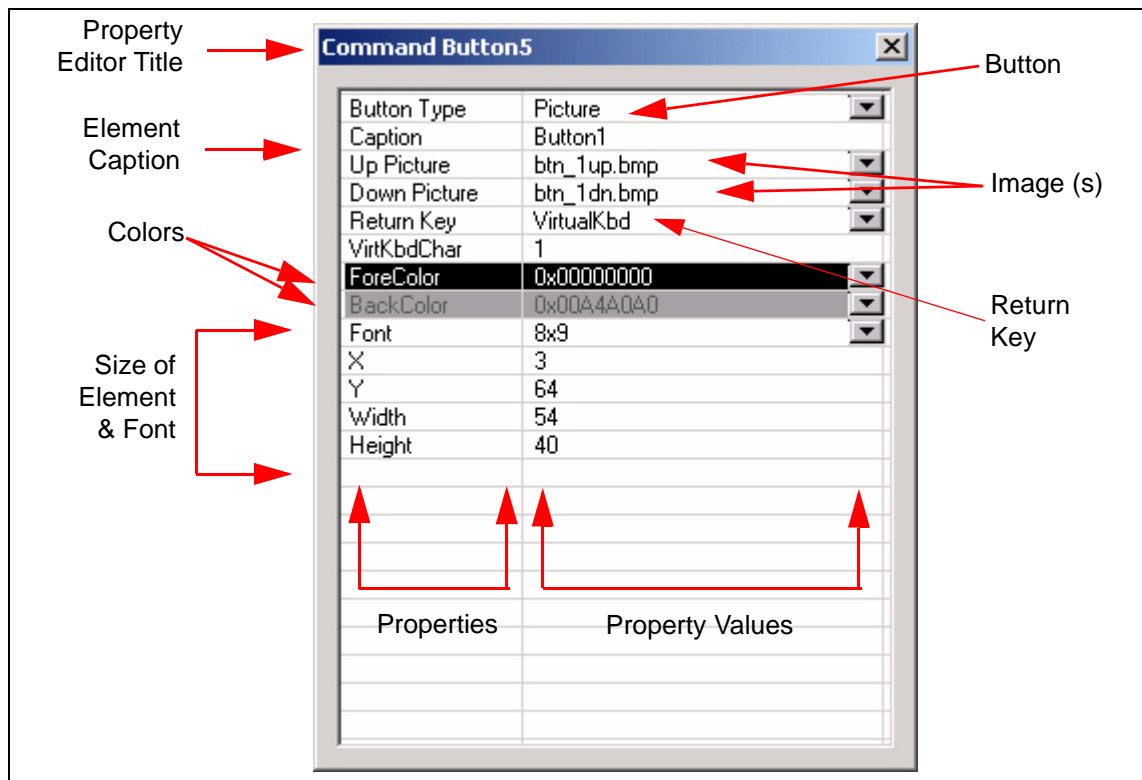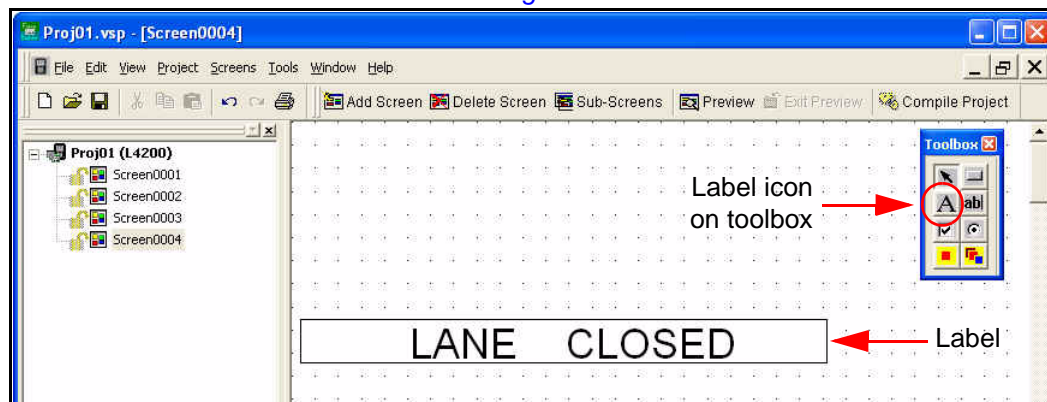

Figure 2-17   *Label with Text*

2. Place the cursor over the desired start location for the Label. Click and hold the left mouse key, drag the cursor to the desired end location for the Label, then release the mouse key. An outline of the Label is drawn as the cursor moves.

    NOTE   You can resize and move the Label at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the Label properties menu.

3. Double click the Label to open the Label properties box as shown in *Figure 2-18*.

Figure 2-18   *Label Properties Box*

Text Boxes

Text boxes allow customers to enter specific information during a transaction. In the example below, a text box has been designed for a 4 digit PIN (Personal Identification Number) entry.

Figure 2-19   *Text Box on PIN entry type form*

To create and configure a Text Box:

1. Display a screen in the work window.

2. Click the **Text Box** icon on the toolbox as shown in *Figure 2-20*.
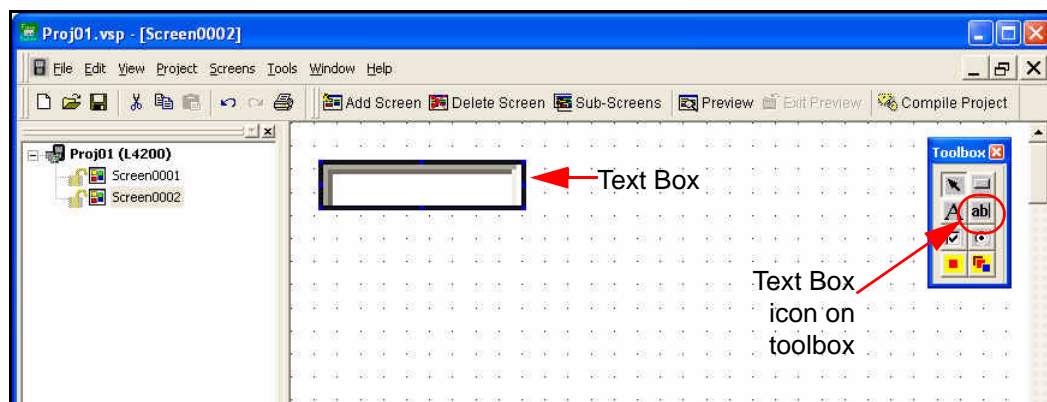
Figure 2-20   *Text Box*

3. Place the cursor over the desired start location for the Text Box. Click and hold the left mouse key, drag the cursor to the desired end location for the Text Box, then release the mouse key. An outline of the Text Box is drawn as the cursor moves.

4.   Double click the Text Box to open the Text Box properties box to configure the look and action of the box (*Figure 2-21*).

Figure 2-21   *Text Box Properties Box*

Check Boxes

A Check Box is used to send a true or false selection to the application. A Check Box can be set to appear checked on the terminal screen.

To create and configure a Check Box:

1.   Display a screen in the work window.

2.   Click the **Check Box** icon on the toolbox as shown in *Figure 2-22*.
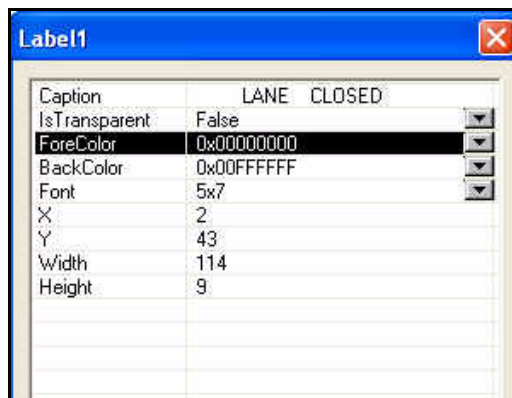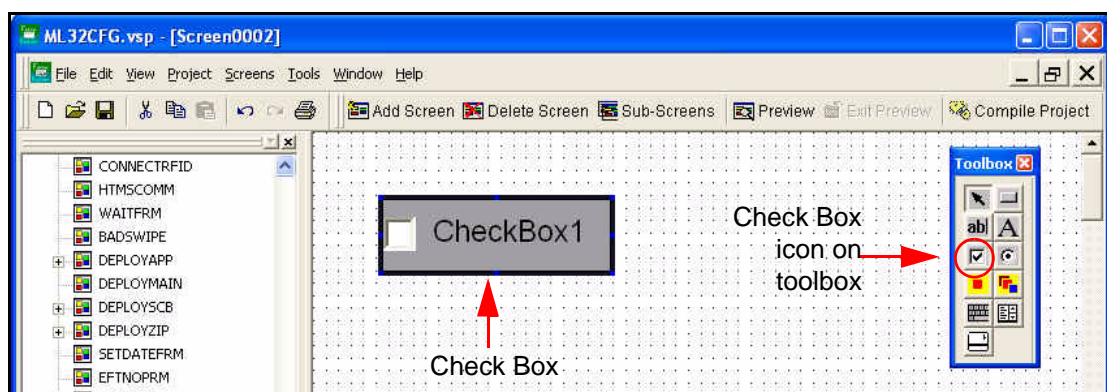

Figure 2-22   *Check Box*

3. Place the cursor over the desired start location for the Check Box. Click and hold the left mouse key, drag the cursor to the desired end location for the Check Box, then release the mouse key. An outline of the Check Box is drawn as the cursor moves.

✓   **NOTE**   You can resize and move the Check Box at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the Check Box properties menu.
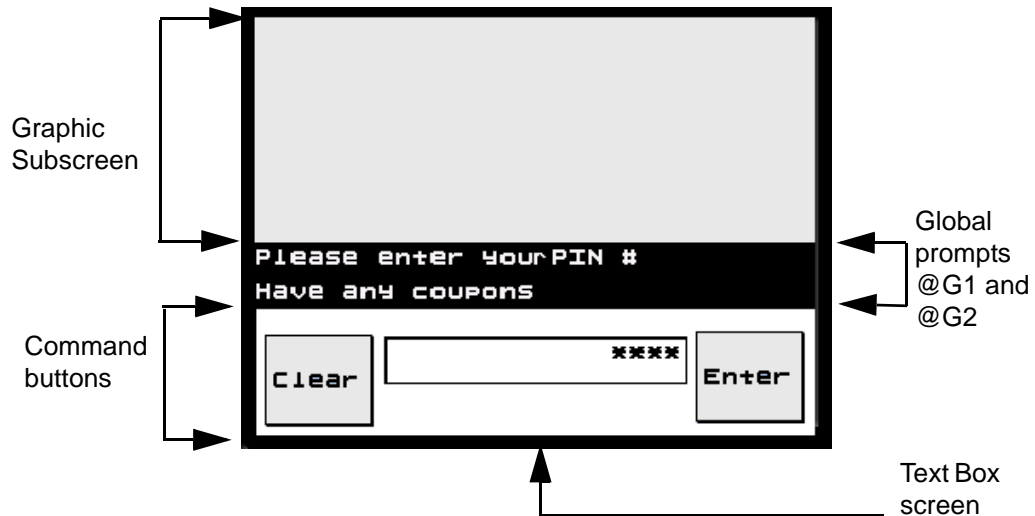
4. Double click the Check Box to open the Check Box properties box to configure the look and action of the box (*Figure 2-23*).

Figure 2-23   *Check Box Properties Box*

Option Buttons

An Option Button is used to send a true or false selection to the application. An Option Button can be set to appear selected on the terminal screen.
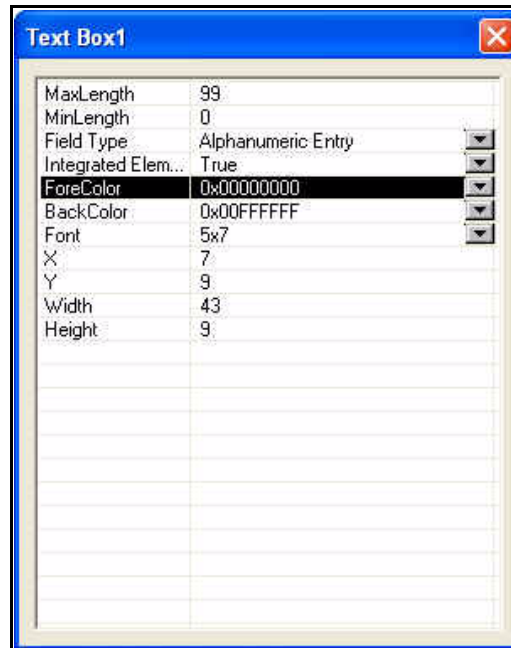
To create and configure an Option Button:

1. Display a screen in the work window.

2. Click the **Option Button** icon on the toolbox as shown in *Figure 2-24*.
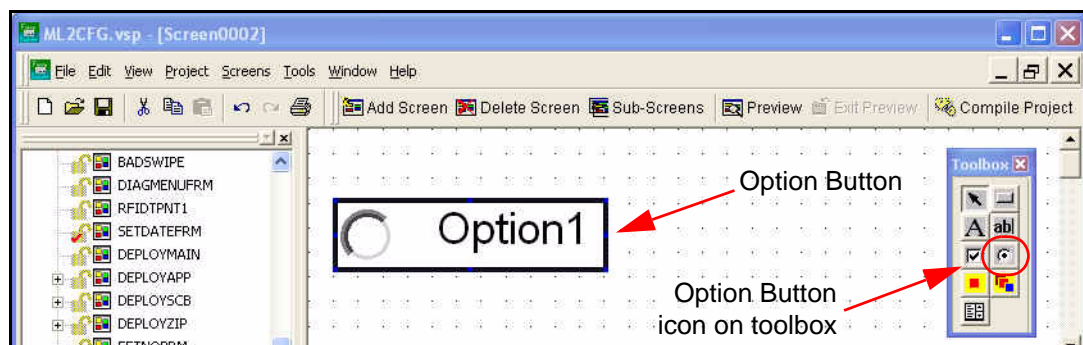
Figure 2-24   *Option Button*

3. Place the cursor over the desired start location for the Option Button. Click and hold the left mouse key, drag the cursor to the desired end location for the Option Button, then release the mouse key. An outline of the Option Button is drawn as the cursor moves.

✓ *NOTE* You can resize and move the Option Button at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the Option Button properties menu.

4. Double click the Option Button to open the Option Button properties box to configure the look and action of the button (*Figure 2-25*).
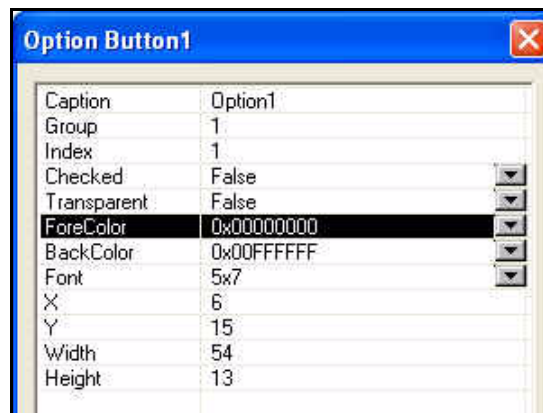
Figure 2-25   *Option Button Properties Box*

Images

Multi-Lane terminals support the addition of graphical images to enhance the delivery of customized message to customers.

✓ *NOTE* FormBuilder is not a graphics editing application. Symbol suggests the use of Adobe Photoshop, Corel Draw, Microsoft Paint or other digital image editing programs to fine tune the graphics before inserting them into FormBuilder.

The following image formats are supported in Formbuilder: GIF, JPEG, JPG, TIF, TIFF, BMP. Other formats are also supported. Please refer to the Properties box for a list.

Adding an image to the FormBuilder screen is done in two steps. First, you must add an image box to the screen. Think of this as a placeholder. Next, you must open the property box and add the graphic to the image box. The graphic will be associated with only that image box.

Adding an Image Box

To create an Image Box:

1. Display a screen in the work window.

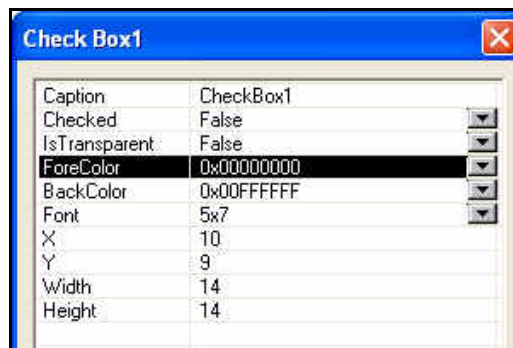2. Click the **Image** icon on the toolbox as shown in *Figure 2-26*.
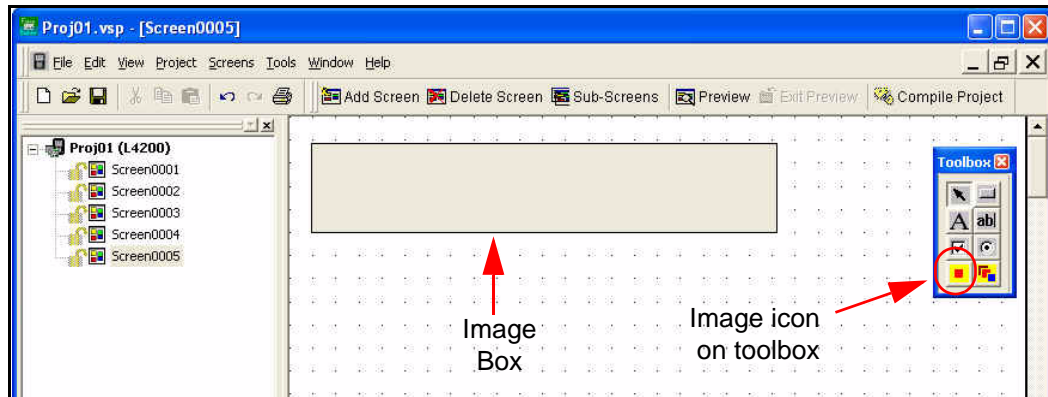

Figure 2-26   *Image Box*

3. Place the cursor over the desired start location for the image. Click and hold the left mouse key, drag the cursor to the desired end location for the image, then release the mouse key. An outline of the Image Box is drawn as the cursor moves.

    ✓   *NOTE*   You can resize and move the Image Box at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the Image Box properties menu.

Adding a Graphic to the Image Box

To add a graphic to an image box:

1. Double click the Image Box to open the Image properties box.

2. Click on the Picture pull down and browse to the image file.
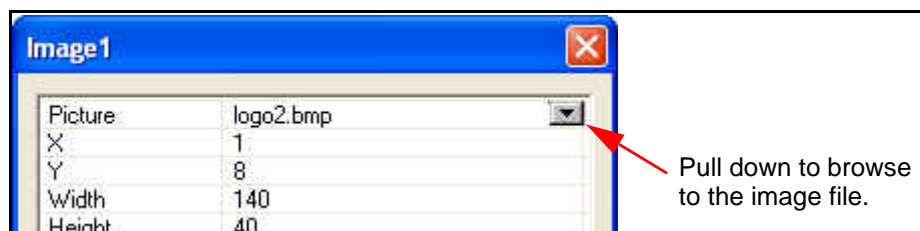
Figure 2-27   *Image Properties Box*

3.   Select the graphic to fill the Image Box and click **Open**.
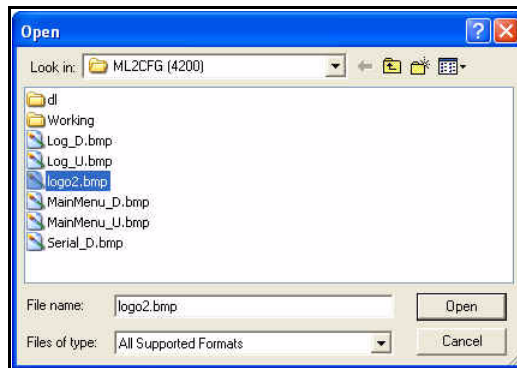
Figure 2-28   *Selecting an Image*

The image displays in the Image Box within the Work Window screen (*Figure 2-29*).
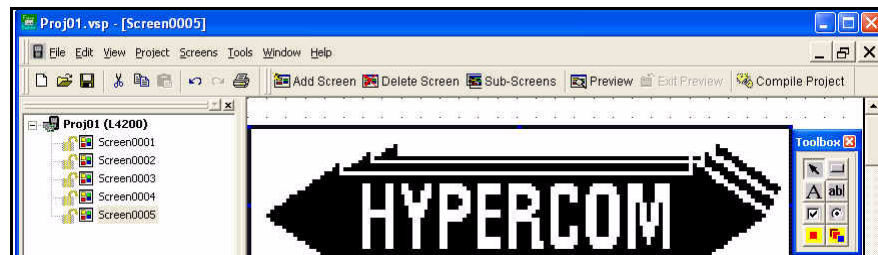
Figure 2-29   *Image Inserted into Image Box*

> *NOTE*   GIF animation files cannot be seen in the FormBuilder utility. However, the GIF files will be displayed on the device terminal.

Adding Multi-Images

Multiple images can be displayed in one area of the screen. This feature can be used to show different images or to create a sequence of images that appear on the screen.

✓ **NOTE**   You can place only *one* Multi-Image Box on each screen.

Figure 2-30   *Multiple Images on the Swipe form*

To add a multiple images to the Multi-Image Box:

1.   Display a screen in the work window.

2.   Click the **Multi-Image** icon on the toolbox as shown in *Figure 2-31*.
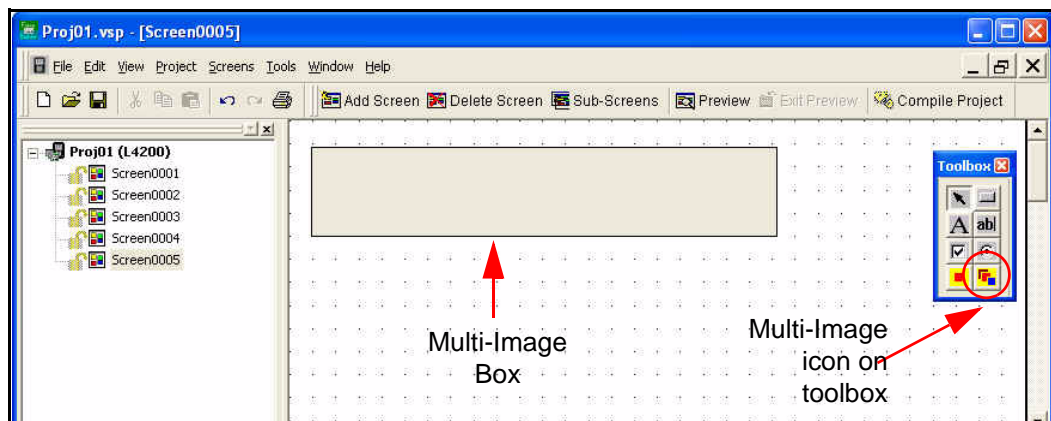
**Figure 2-31**   *Multi-Image Box*

3.   Place the cursor over the desired start location for the Multi-Image Box. Click and hold the left mouse key, drag the cursor to the desired end location for the Multi-Image Box, then release the mouse key. An outline of the Multi-Image Box is drawn as the cursor moves.

✓ **NOTE**   You can resize and move the Multi-Image Box at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the Multi-Image Box properties menu.

4. Double click the Multi-Image Box to open the Multi-Image Box properties box to configure the look and action of the box.
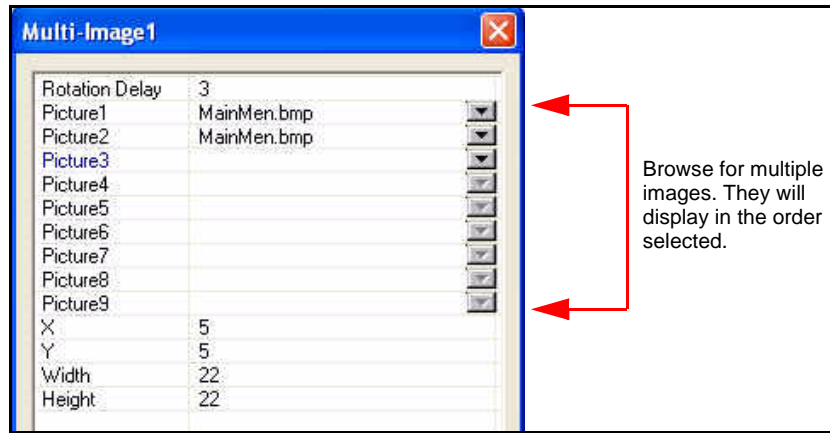
Figure 2-32 *Multi-Image Box properties Box*

5. In the Properties box, browse for the images you want to load into the Image Box.

✓ **NOTE**   Only the first seven characters of each image name are shown in the properties box.

6. Select the image and click **Open**.
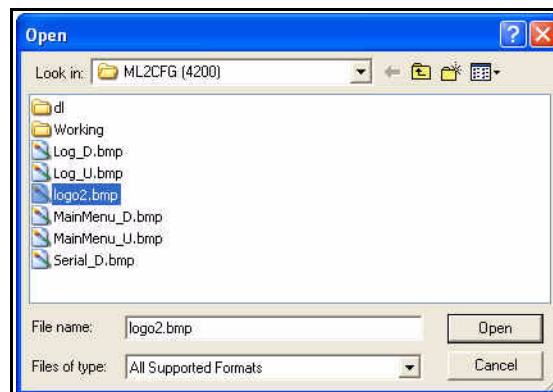
Figure 2-33 *Selecting an Image for the Multi-Image Box*

The image displays in the Image Box on the Work Window screen.

7. Select additional images as required for the multi-image display.

Images will rotate in numerical order (Picture 1, Picture 2, etc.) For example, if you wanted to display the rotating phrase **Thank you for shopping** with each word appearing as one image, you would follow this procedure:

Picture 1: Thank.jpg
Picture 2: you.jpg
Picture 3: for.jpg
Picture 4: shopping.jpg

Each picture would then display on the screen in a rotation pattern.

Virtual Keyboards

The virtual keyboard feature allows for easy global programming for PIN pads, address forms, or other customer input fields. Choose either a standard keyboard layout or customize graphics for a more branded look. The virtual keyboard tool is not available for all terminal types.

Creating a Virtual Keyboard

To create a virtual keyboard:

1. Display a screen in the work window.

2. Using the Toolbox, select the **Virtual Keyboard** icon as shown in *Figure 2-34*.
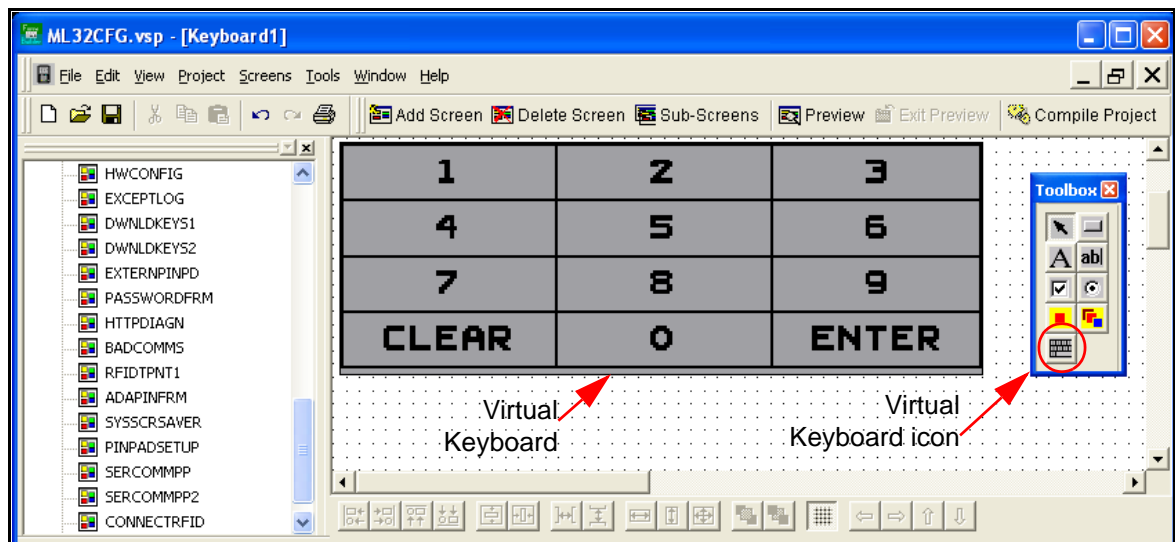
Figure 2-34   *Virtual Keyboard*

3. Place the cursor over the desired start location for the virtual keyboard in the Work Window. Click and hold the left mouse key, drag the cursor to the desired end location for the virtual keyboard, then release the mouse key. An outline of the virtual keyboard is drawn as the cursor moves.

4. Double click the virtual keyboard to access the Virtual Keyboard Properties Box.
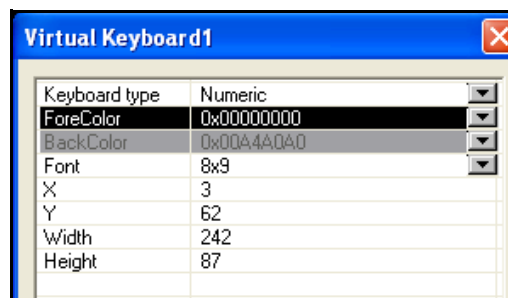
Figure 2-35   *Virtual Keyboard Properties Box*

5. FormBuilder supports a variety of alpha, alpha-numeric, and numeric keyboard formats. In the Property Box, select which keyboard you need. You can also change the Background and Font colors in the Property Box.

> **NOTE** You can resize and move the Virtual Keyboard at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the Multi-Image Box properties menu.

Creating a Custom Keyboard

Instead of using the standard virtual keyboard, the user may choose to create a custom keyboard. *Figure 2-36*, below, is an example of a custom keyboard. This customized graphic keyboard includes Command Buttons and a Virtual Keyboard return key.
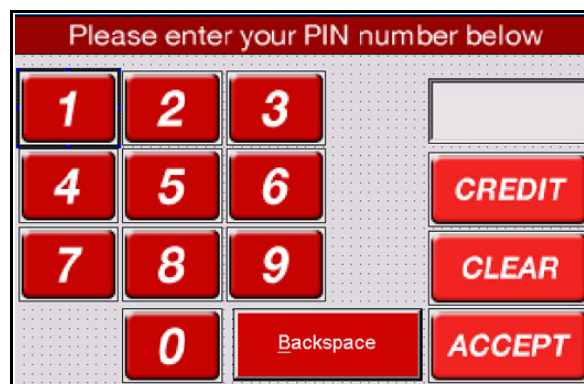
Figure 2-36   *Custom Numeric Keyboard*

To create a custom keyboard:

1. Display a screen in the work window.

2. Using the Toolbox, create a command button.

3. Double click the command button to open the Properties Box and note the X and Y pixel size of the button.

4. Using an graphics editing program, create a custom graphic in the same X and Y pixel size as the command button. This should be button number 1.

> **NOTE** Should you want the Keyboard to synthesize the button being depressed, you will need to create two images. These will be assigned to the Up Picture and Down Picture options in the Property Box.

5. In FormBuilder, duplicate the button as required using copy and paste commands.

> **NOTE** If you are creating a PIN screen, you will have to create an equal number of images to correspond to each numeric button. For example, Button 1 = Image 1, Button 2 = Image 2, and so on.

6. Layout the numeric keyboard and then double click on Box 1 to access the Property Box.

7. In the Property Box, you will have the following options to customize:

    a. Button Type (picture or text)

    b. Caption (should be Button1 - do not change)

    c. Up Picture (search for the graphic image you created)

       d.   Down Picture (search for the graphic image of a depressed button)

       e.   Return Key (select VirtKb)

       f.   VirtKbdChar (input the number 1 for button one, 2 for button two, etc.)

  8. **Repeat** these steps for the remainder of buttons.

> ✓   **NOTE** For buttons like Clear, Enter, Cancel, etc., choose the appropriate Return Key in the Property Box.

Pole Displays

FormBuilder allows you to configure a screen that lists items on the terminal. As each item is entered into the ECR, the item is displayed in a Label on the terminal. Pole Display codes are used to identify the items. When building the item list on the FormBuilder screen, enter a Pole Display code on the caption line of each Label's property menu.

> ✓   **NOTE** Pole Displays are signified with the symbol combination @PD#. Up to 30 pole displays can be used in FormBuilder. The last PD# will be the total.

.

@PD1
@PD2
@PD3
@PD4
@PD5
@PD6

```
Ice 3 bag(s)          $23.00
Torritos 45x           $9.00
Soda 24cnt             $1.50
Tomatoes 3lbs.        $10.99
Green Salad 1 bag(s)$29.99
Red Pepper 4cnt        $5.99
Total                $101.59
```

Pole Display screen
in FormBuilder

Pole Display screen
on terminal
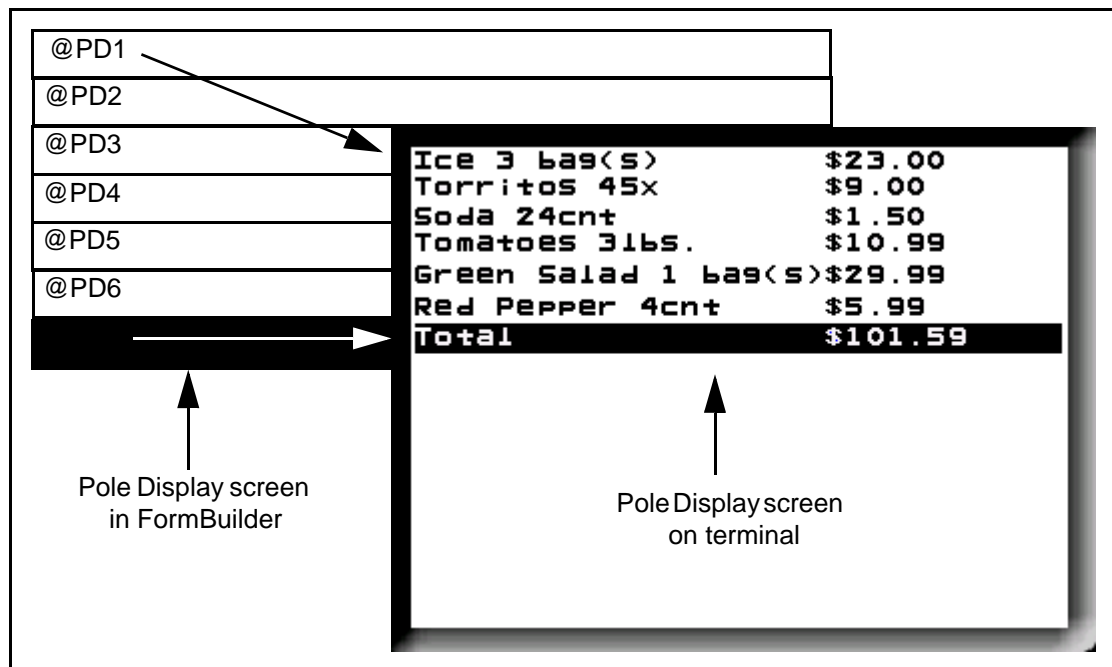
Figure 2-37   *Pole Display*

List Boxes

A List Box is used to scroll receipt items on the terminal. As the item is entered into the ECR, the product is displayed in the list box. The user can add labels containing @PDs for Subtotal, Tax, and Total.

To create and configure a List Box:

1. Display a FormBuilder screen in the work window.

2. Click the **List Box** icon on the toolbox.
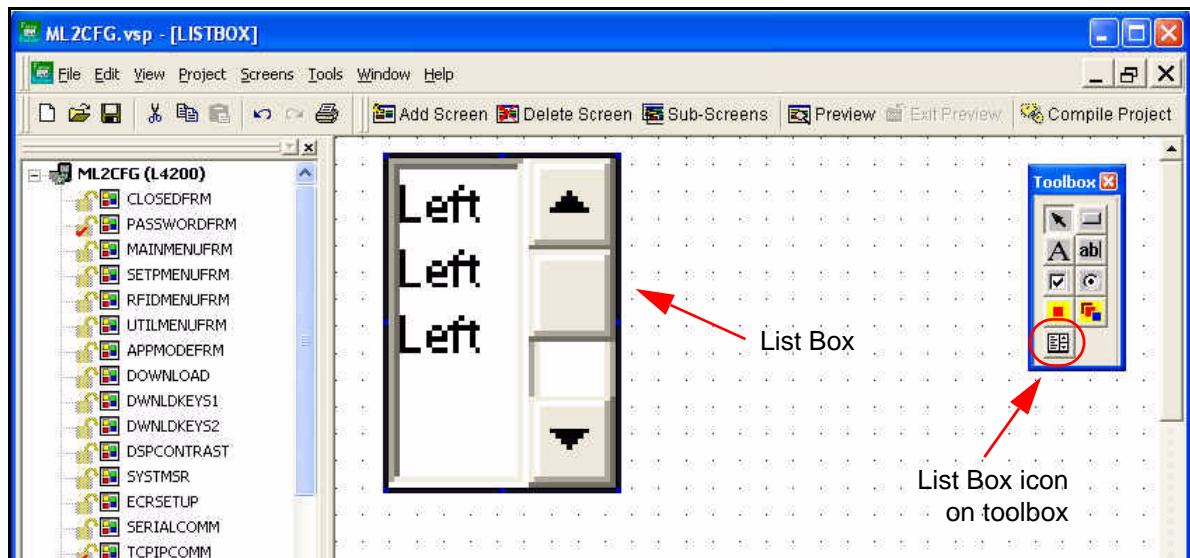
Figure 2-38   *List Box*

3. Place the cursor over the desired start location for the List Box. Click and hold the left mouse key, drag the cursor to the desired end location for the List Box, and then release the mouse key. An outline of the List Box is drawn as the cursor moves.

   NOTE   You can resize and move the List Box at any time using standard Windows methods, or by setting the Width/Height dimensions and X/Y coordinates in the List Box properties menu.

4. Double click the List Box to open the properties box to configure the look and action of the box. Default settings are shown in *Figure 2-39*.
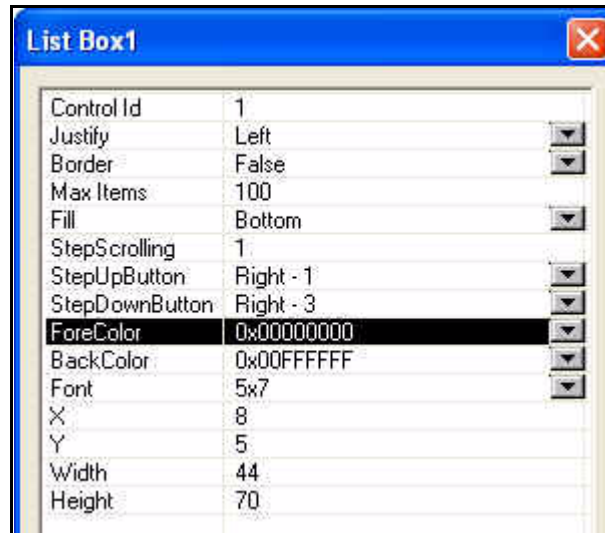
Figure 2-39 *List Box Properties Box*

5. To add a Subtotal, Tax, or Total to the screen, use labels containing @PDs. In the example shown in *Figure 2-40*, a Total (a label containing @PD1) is added below the receipt items (list box).

.

List Box and Label on
FormBuilder screen
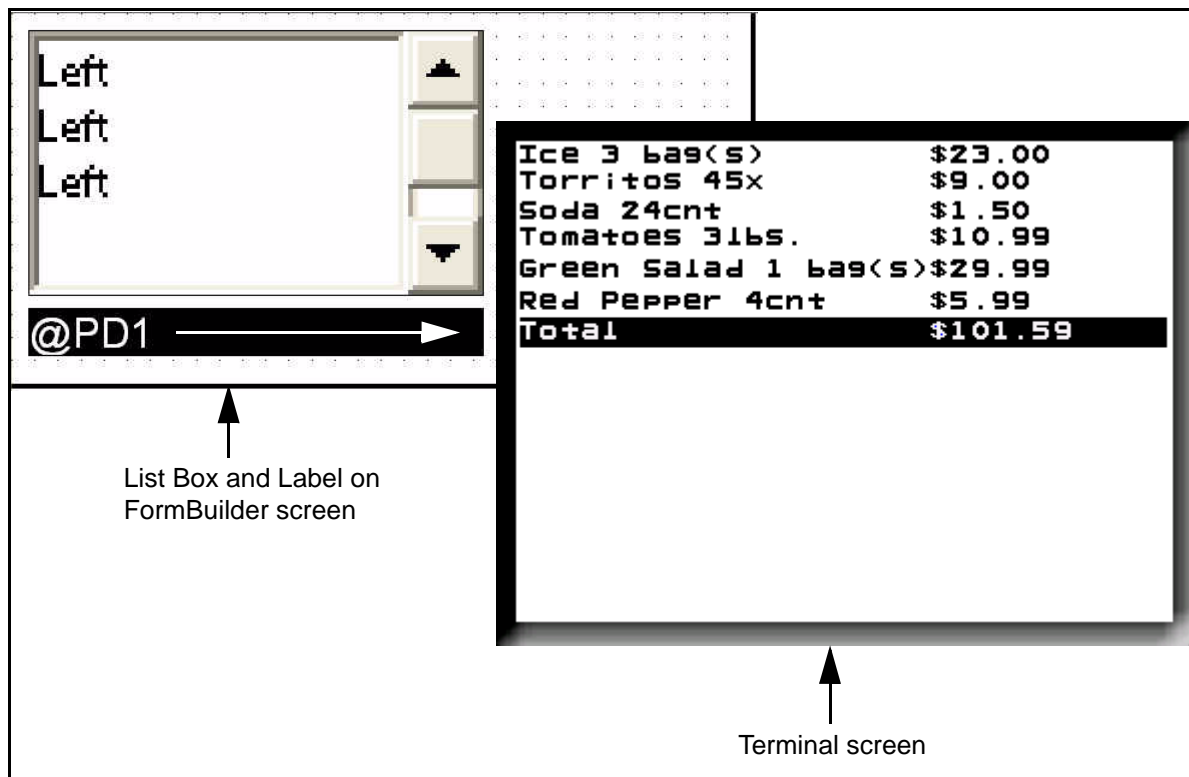
Terminal screen

Figure 2-40 *Pole Display and Label Containing @PD1*

Global Prompts

Global Prompts are labels with text @G1–@G4 that allow users to configure text prompts that are displayed on the terminal. *Figure 2-41* shows a FormBuilder screen and a global prompt properties box.
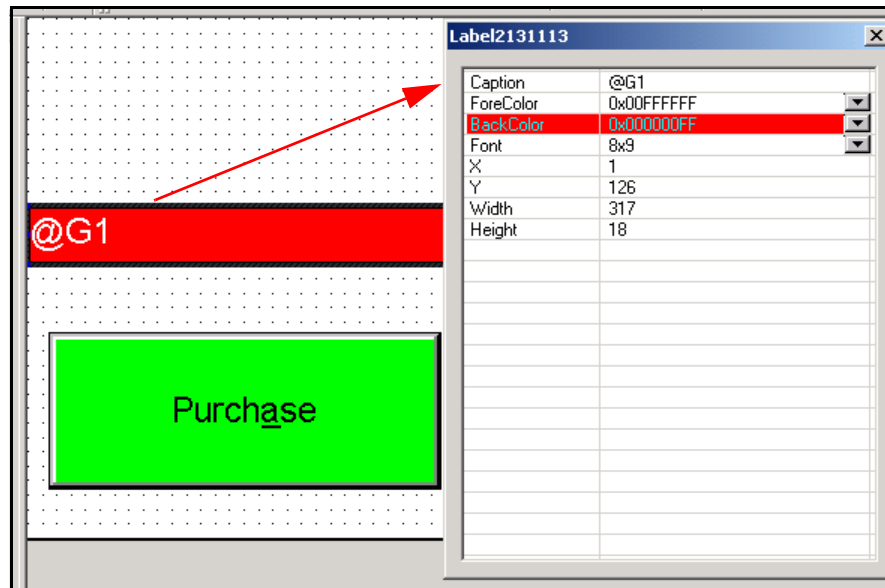
Figure 2-41   *Global Prompt*

In the next example, a terminal display screen shows @G1and @G2 global prompts used on a Cashback type form.
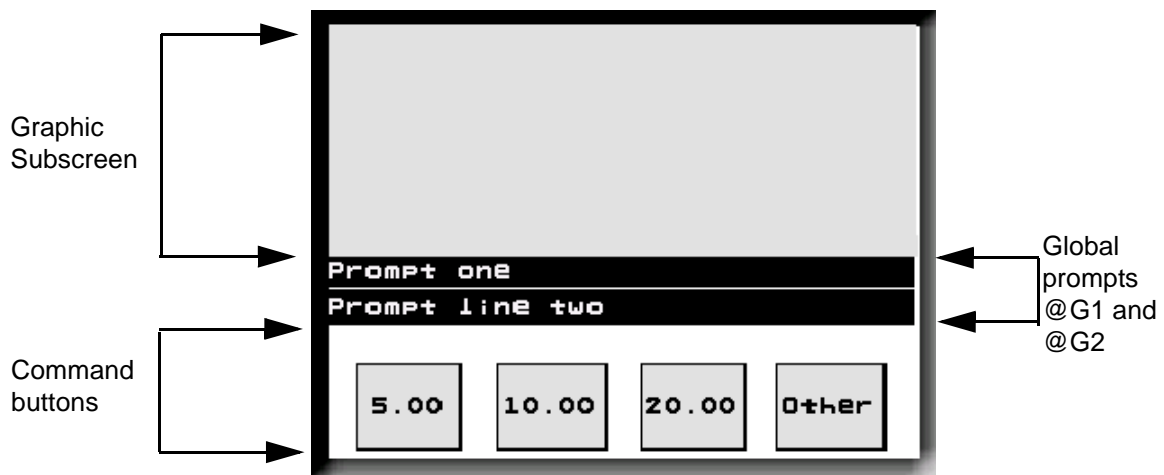
Figure 2-42   *Global Prompts on Cashback type form*

MSR Control

A Magnetic Stripe Reader (MSR), also called a magstripe reader, is a hardware device that reads the information encoded in the magnetic stripe located on the back of a plastic card. The MSR Control allows configuration of the following MSR properties:

- Tracks to read
- Successful card swipe criteria that allow the user to specify what tracks must be read to decide whether a swipe was successful
- Failed card swipe limit
- Whether to enable a Smart Card Reader
- Whether to enable a ISO 14443 A/B Card Reader

To configure MSR Control properties:

1. Display a FormBuilder screen in the work window.

2. Click the **MSR Control** icon on the toolbox.
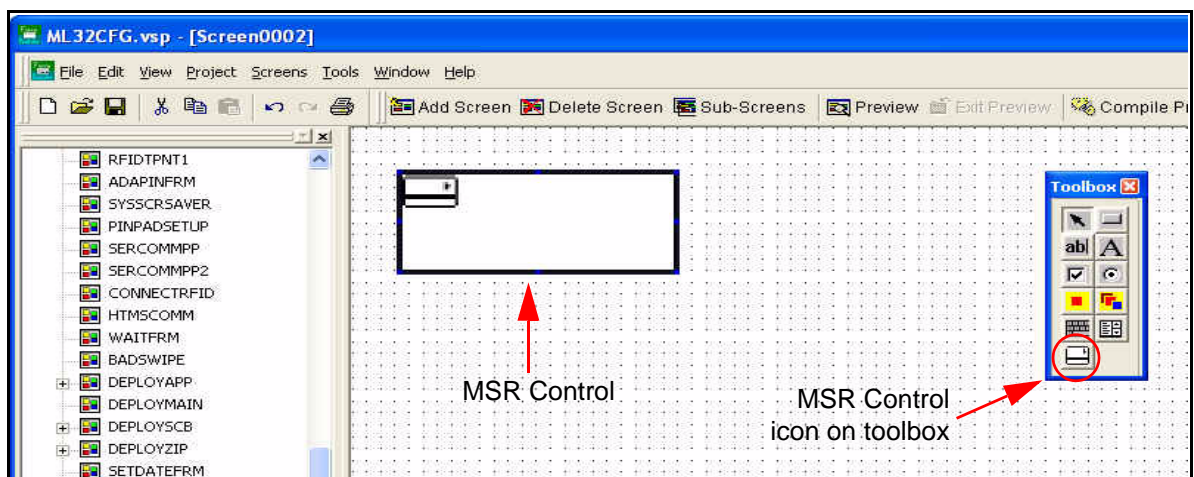
Figure 2-43   *MSR Control*

3. Place the cursor over the desired start location for the MSR Control. Click and hold the left mouse key, drag the cursor to the desired end location for the MSR Control, and then release the mouse key. An outline of MSR Control is drawn as the cursor moves.

✓ **NOTE**   You can resize and move the MSR Control at any time using standard Windows methods. Only one MSR Control is allowed on each form and it will be invisible when the screen is displayed on the device.

4. To configure the action of the MSR Control, double click the MSR Control box. An MSR Control properties dialog box similar to the following is displayed:
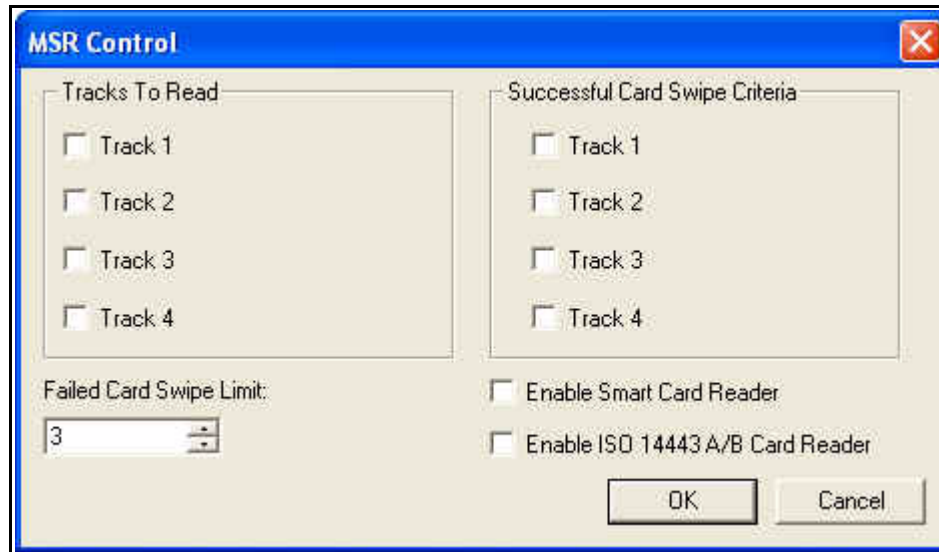
Figure 2-44   *MSR Control properties dialog box*

Project Settings

Project Settings tabs allow the user to access settings including information about packinglists and platforms, legacy compatibility, and screen protector replacement triggers.

To access project settings:

1. From the main menu toolbar select **Project** > **Settings ...** A dialog box similar to the following displays:
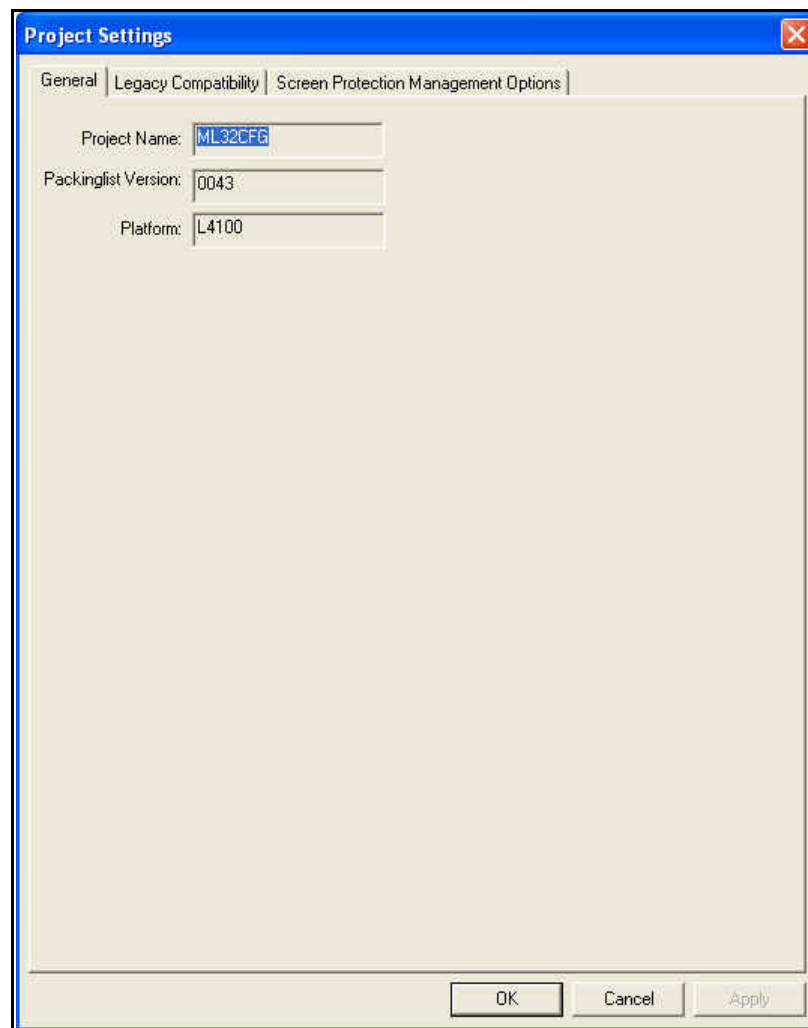
Figure 2-45   *General Tab*

The General tab, shown above in *Figure 2-45*, provides project name, packinglist version, and platform information.

1.   Select the Legacy Compatibility tab, shown below in *Figure 2-46*, to set KSN format, Form Request 'V' responses, and DOS-standard file names.
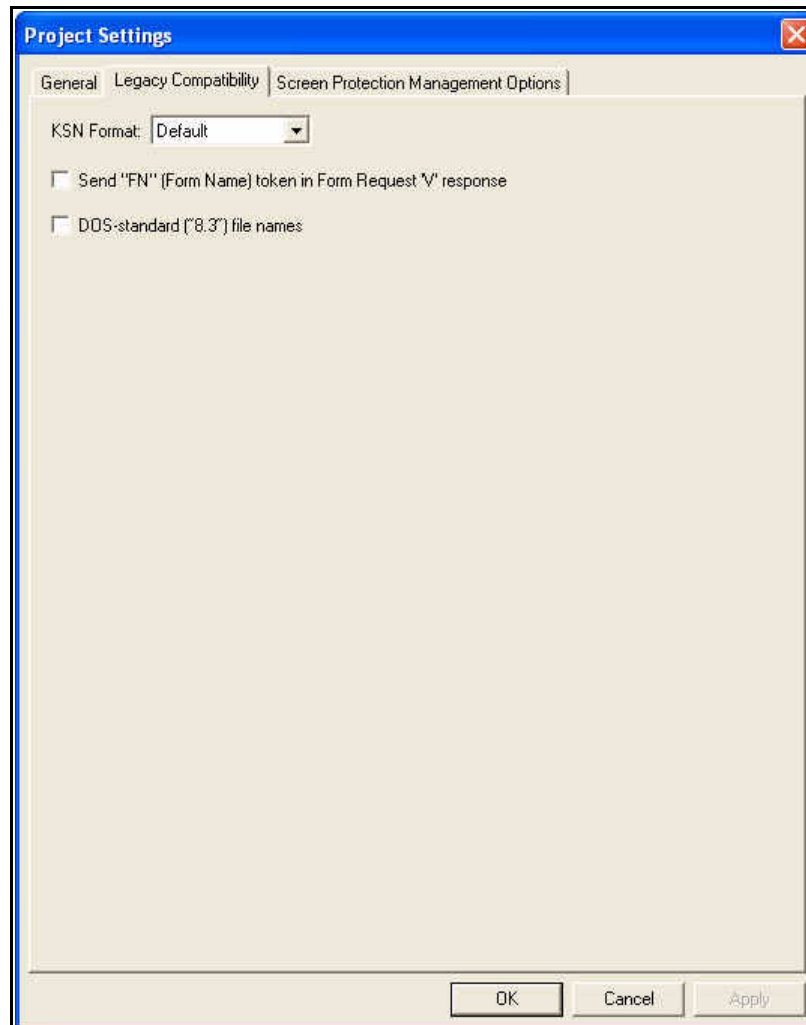
Figure 2-46   *Legacy Compatibility Tab*

2. Select the Screen Protection Management tab, shown below in *Figure 2-47*, to set screen protector replacement triggers. If required, slide the selection bar to customize the settings.

Figure 2-47 *Screen Protection Management Tab*

Table 2-1 lists the options available from the Screen Protection Management tab.

Table 2-1   *Screen Protection Management Options*

Option	Value	Example
Maximum number of signatures allowed before the screen protector expires	10,000 - 20,000 signature captures	If this value is set to 10,000, when signature capture number 10,001 is attempted, the application displays a message and will not allow further screen captures until the screen protector is replaced.
Frequency (in days) in which the user will be reminded to replace the screen protector	1 - 7 days	If this value is set to 1, the application will prompt the user will be reminded to replace the screen protector each day after the screen protector expires.
Maximum number of days that signature capture is allowed after the screen protector expires	0 - 14 days	If this value is set to 14, on day 15, the application displays a message to replace the screen protector. If the value is set to 0, signature capture will be disabled on the device immediately after the screen protector expires.
Maximum number of days that signature capture is allowed after the device detects that the screen protector is not present	0 - 14 days	If this value is set to 0 (the default setting), as soon as the screen protector is not present, the signature capture is disabled on the device and will not be enabled until the screen protector is replaced.
Number of minutes in which the user will be reminded to install a screen protector	1 - 10 minutes	If this value is set to 1 and the screen protector is removed, the application displays a message each minute.

⚠ **IMPORTANT**   Once signature capture is disabled, the only way to enable signature capture is to replace the screen protector.

The following is an example of a message that may be displayed on the terminal, regarding signature captures:

`Screen protector expired. Please replace! Do you wish to replace it right now?`

If **Yes** is selected, the following message is displayed:

`Please install screen protector and press OK.`

If a new screen protector is installed and **OK** is selected, the screen displays the following message:

`Is a new screen protector installed?`

If the new screen protector has been installed and **Yes** is selected, signature captures are enabled.

Virtual Screens

Virtual screens provide a means of grouping screens and the ability to define the position of a screen within that group. This grouping allows the FPE32 application to rotate screens. Based on business requirements, a screen designer is able to create one or several signature capture screen groups, e.g. one group to request purchase approval in English and another group to request purchase approval in Spanish. See *Signature Screen Toggling* below as an example of how signature box screens are rotated using virtual screens.
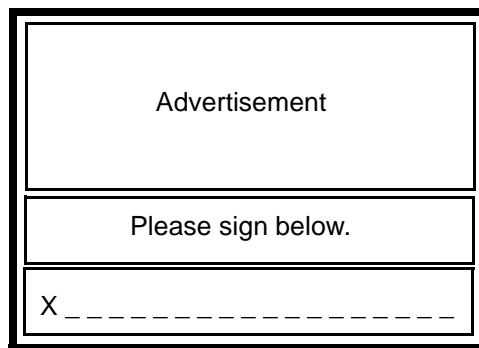
Signature Screen Toggling

Signature screen toggling is rotating the location of the signature box to different locations on the screen to extend the life of the screen or screen protector.

In the following example, the first signature box is positioned at the bottom of the screen (SIGNATURE), the second signature box is positioned at the top of the screen (SIGNATURE1), and the third signature box is positioned in the middle of the screen (SIGNATURE2).

To use signature screen toggling:
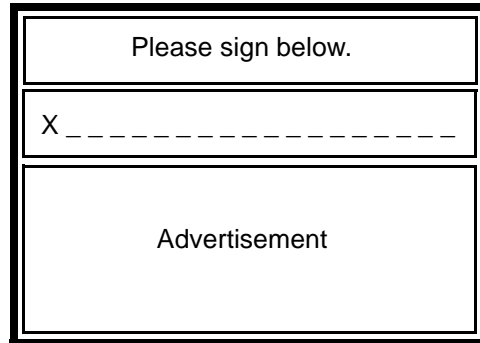
1. **Open** the project you are modifying.

2. Create a new screen named SIGNATURE with the signature box at the bottom of the screen. The layout of this screen could be similar to the following screen:

Advertisement

Please sign below.

X _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Figure 2-48   *SIGNATURE screen layout*
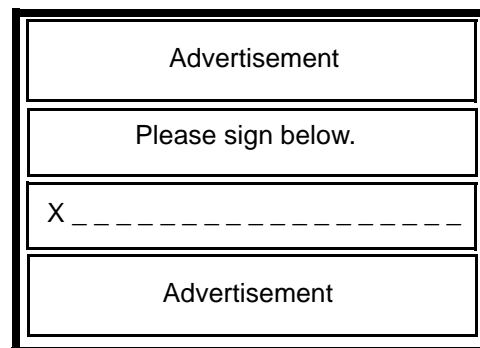
3. Copy the SIGNATURE screen you created in the previous step, rename it SIGNATURE1, and move the signature box to a different location. In this example, the signature box is positioned toward the top of the screen (*Figure 2-49*):

Figure 2-49   *SIGNATURE1 screen layout*

4. Copy the SIGNATURE screen you created in the previous step, rename it SIGNATURE2, and move the signature box to a different location. In this example, the signature box is positioned in the middle of the screen with advertising split above and below the signature box:

Figure 2-50   *SIGNATURE2 screen layout*

5. Select **Project** > **Manage Virtual Screens** > **Add** from the main menu bar. The following dialog box displays:
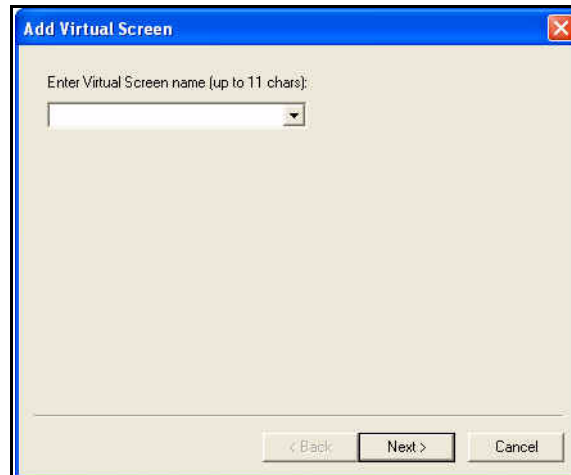
Figure 2-51   *Add Virtual Screen*

6. Enter `SIGNATURE` as the name of the virtual screen.

7. Select **Next**. The following dialog box displays screens with at least one signature capture box assigned to it:
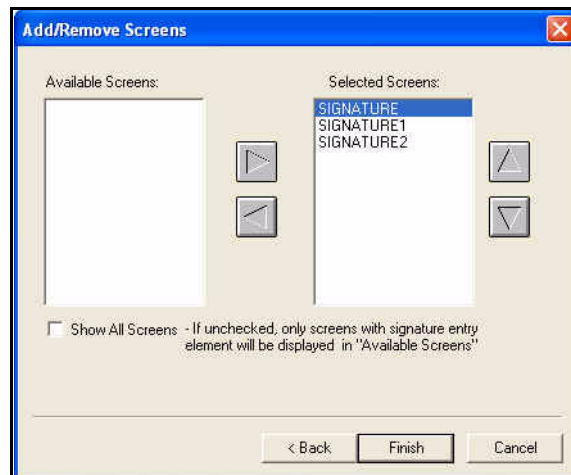
Figure 2-52   *Add/Remove Screens dialog box*

8. One at a time, select the SIGNATURE, SIGNATURE1, and SIGNATURE2 screens from the **Available Screens** list and click the **Right Arrow** to move the selected screens to the **Selected Screens** list as shown in *Figure 2-52*. Use the **Up Arrow** and **Down Arrow** to arrange the screens in the order you need them to transition when the virtual screen is selected, if they are not already in the correct order.

9.   Click **Finish**. The SIGNATURE virtual screen with its selected screens (SIGNATURE, SIGNATURE1, and SIGNATURE2) is added to the bottom of the Project File Tree window as shown below in the *Figure 2-53* example.
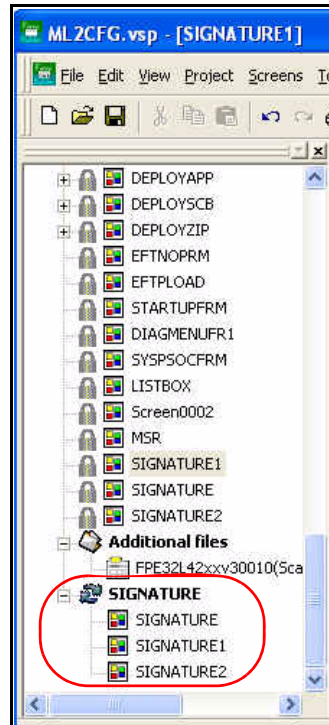
Figure 2-53   *Virtual screen file in Project File Tree window*

Soft Keys

A Soft Key is used to create buttons with configurable text. A soft key code can be used to signify debit/credit buttons or even language selections.

✓   ***NOTE***   The format of soft keys is @B#. There can be up to nine soft keys per screen (@B1-9).

⚠   ***IMPORTANT***   If there is a soft key button on a screen, but no text has been provided, that button will be hidden and will not display on the terminal.
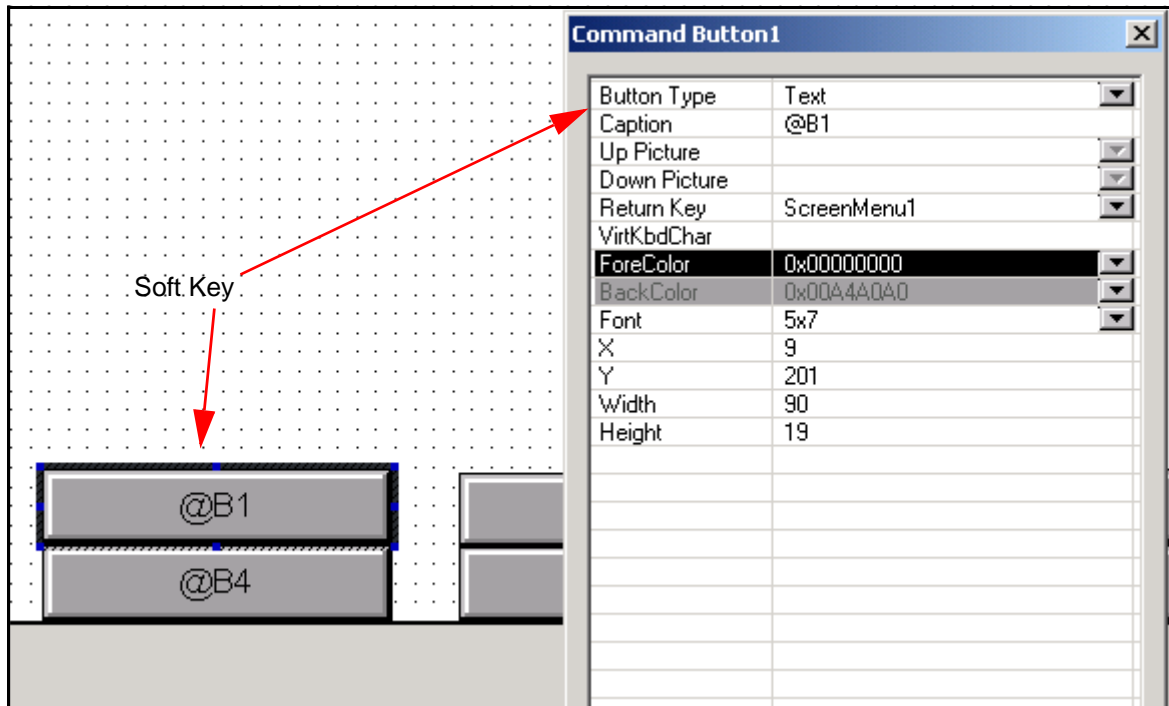
Figure 2-54   *Soft Key Prompts*

Fonts

FormBuilder allows you to customize fonts on the terminal screen using HyperFont (.hfont). The FPE32 Developer's Toolkit CD includes the Hyperfont application and several font files (.ttf). When using downloadable fonts, the fonts will only appear on the device. The fonts are not displayed in the FormBuilder application.Inserting a Font

> **NOTE**   The length of the font name cannot exceed five characters.

1.   Select **Project > Import > Font**. A dialog box similar to the following opens:
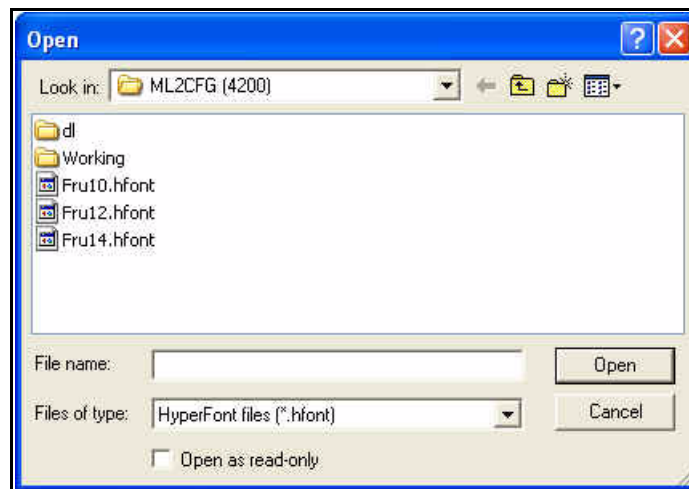
Figure 2-55   *Selecting a Font*

2.   Select the desired font from the designated folder and click **Open.**

The font is inserted into the project and is displayed at the bottom of the file tree window.

Adding a Font

The following procedure is an example of how to use Hyperfont with a Text Box. You can also use Hyperfont with Command Buttons, Labels, Check Boxes, and Option Buttons.

1.   Import the desired font file into the project. See the *Hyperfont Quick Reference Guide* included on the FPE32 Developer's Toolkit CD for information on how to create and import a Hyperfont.

2.   Add a **Text Box** to the screen.

3. Double click the text box to access the properties menu box.
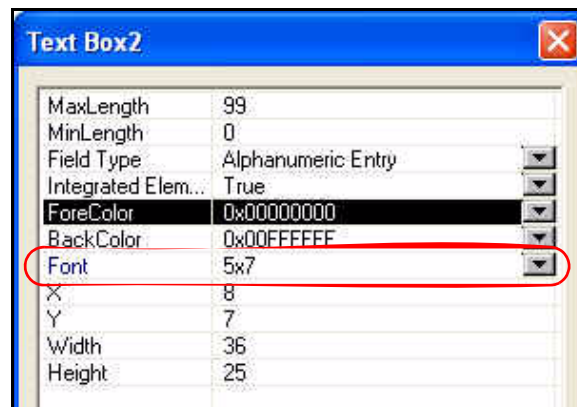
Figure 2-56   *Properties Menu Box*

4. Under the **Font** option, pull down the menu and select **Soft Font . . .** A dialog box similar to the following is displayed:
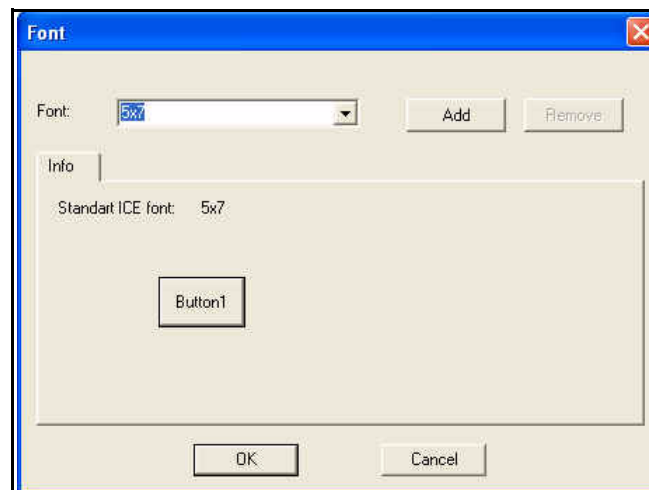
Figure 2-57   *Specifying custom fonts in FormBuilder*

5. Select a font from the pull down menu and click **OK**.

Importing a File

FormBuilder allows the user to import a file. The following example shows how to import a signed .tcms file.

To import a file:

1.   **Open** the project you are modifying.

2.   Select **Project** > **Import > File** from the main menu bar. A dialog box similar to the following displays:
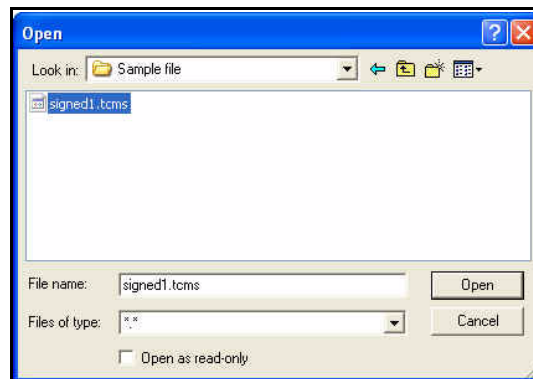
Figure 2-58   *Open dialog box*

3.   Navigate to the file and click **Open**. The file is added to the bottom of the Project File Tree window under **Additional files**, as shown below in the *Figure 2-59* example.
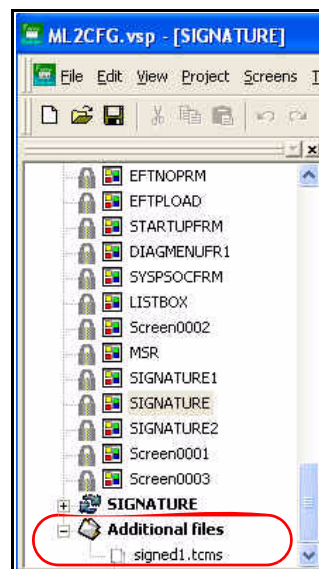
Figure 2-59   *Imported File under Additional Files*

Importing Contactless Firmware

FormBuilder allows the user to import contactless firmware. When a project is compiled, the packinglist contains the firmware file. After the packinglist download completes, the firmware reflash takes place.

To import contactless firmware:

1. **Open** the project you are modifying.

2. Select **Project** > **Import > Contactless Firmware** from the main menu bar. The following dialog box displays:
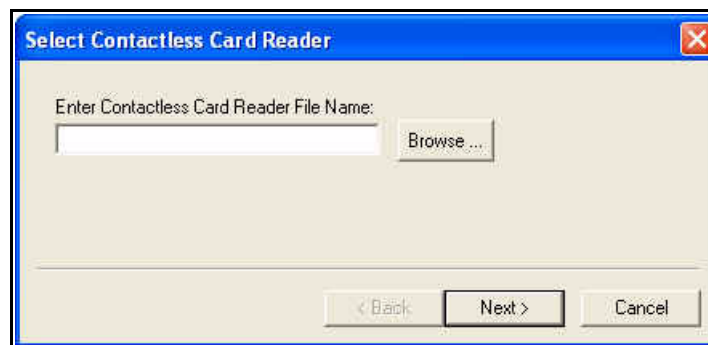
Figure 2-60   *Select Contactless Card Reader dialog box*

3. Click **Browse** to navigate to the contactless card reader firmware.

4. Select the firmware file and click **Open**.

5. Click **Next**. The following dialog box displays reflash attempts, version number, and check sum:
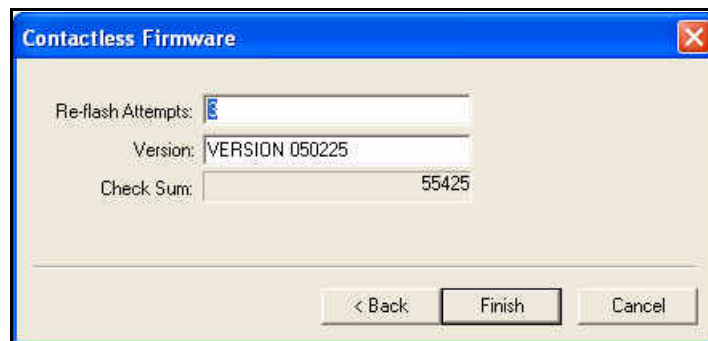
Figure 2-61   *Contactless Firmware dialog box*

6. Make any required changes and click **Finish**.

Importing an Application

FormBuilder allows the user to import an application. When a project is compiled, the packinglist contains the application. After the packinglist download completes, the application load takes place.

To import an application:

1. **Open** the project you are modifying.

2. Select **Project** > **Import > Application** from the main menu bar. The Open dialog box displays.
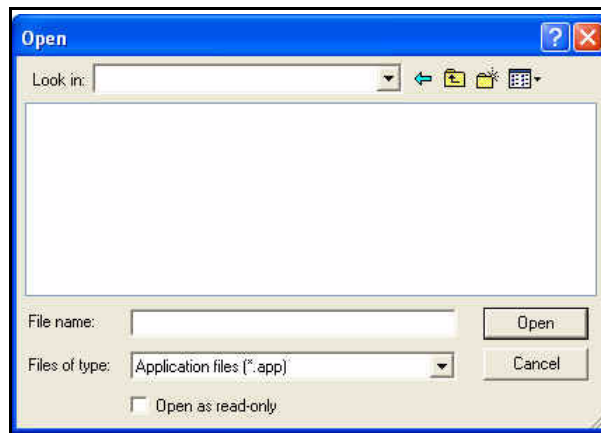
Figure 2-62   *Open dialog box*

3. Navigate to the application and click **Open**. The application is added to the bottom of the Project File Tree window under **Additional files**, as shown below in the *Figure 2-63* example.
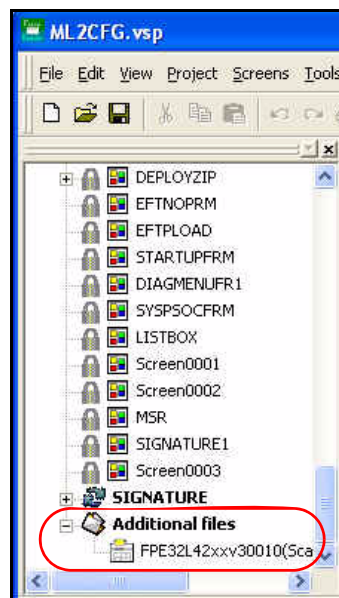
Figure 2-63   *Additional files in Project File Tree window*

Compiling the Project

After all the screens are finished, compile the project for download. FormBuilder creates a `dl` (download) folder containing the packinglist. The packinglist, containing the project screens, can be downloaded to a terminal.

NOTE   Each distinct ECR application has a specific method of activating the download and testing the application. Consult the specific ECR application documentation to determine the appropriate download method.
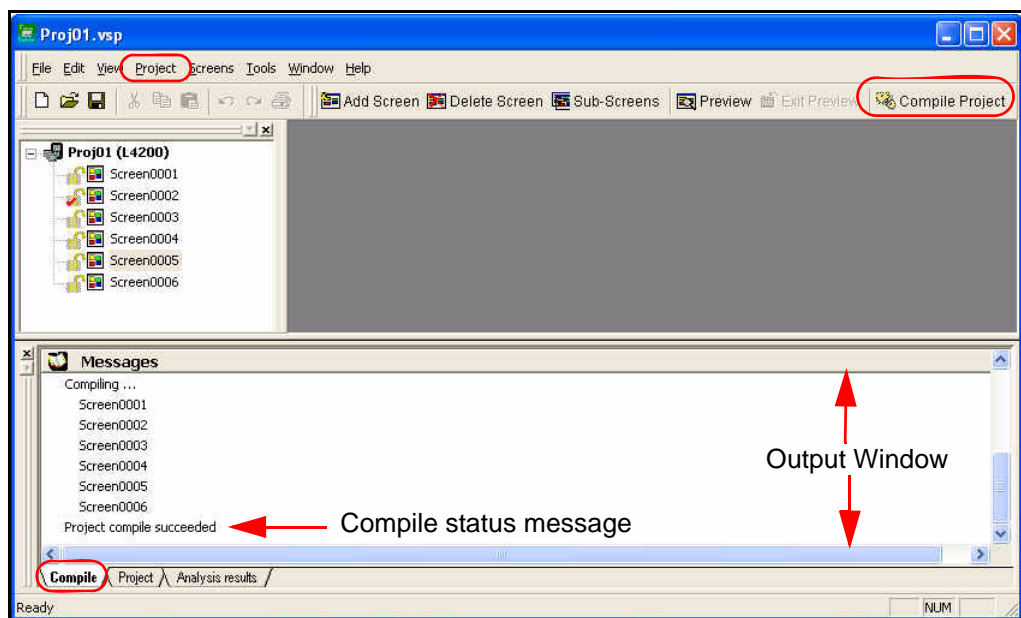
Figure 2-64   *Compile Option*

To compile a project:

1.   Select **Project > Compile** or click the **Compile Project** button in the top right corner of the FormBuilder window as shown in *Figure 2-64*, above. The result of the compile is shown on the Compile tab of the output window. If there are no errors, a compile succeeded status message appears in the output window.

NOTE   If an error occurs during compilation, an error message appears in the output window.

Analyzing Screens

As a project is analyzed, each screen is searched to find elements that could potentially violate security requirements. For example, a Text Box with a MaxLength value greater than 3 that does not include a PIN Entry property could violate security requirements and its security icon would be marked in red in the Output Window as shown in *Figure 2-65*.

✓ **NOTE**   See *Security Icons on page 3-5* for a review of security icons and what they represent.
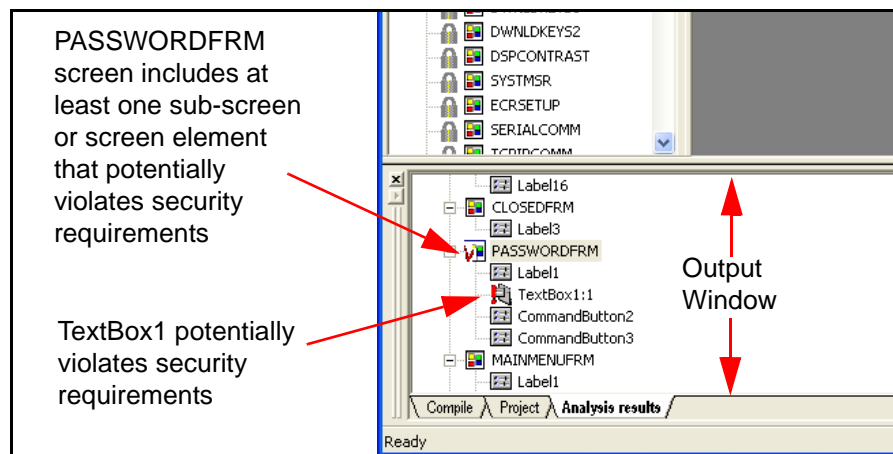
Figure 2-65   *Potential Violation of Security Requirements*

The user can choose to initiate a screen analysis whenever they want or to change settings to analyze screens on startup each time FormBuilder is executed.

To analyze screens:

1.   Select **Project** > **Analyze Screens**. A dialog box similar to the following displays:
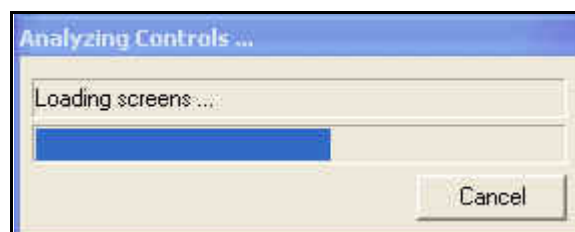
Figure 2-66   *Analyzing Controls dialog box*

The analysis results are displayed in the Output Window under the **Analysis Results** tab at the bottom left corner of the main menu.
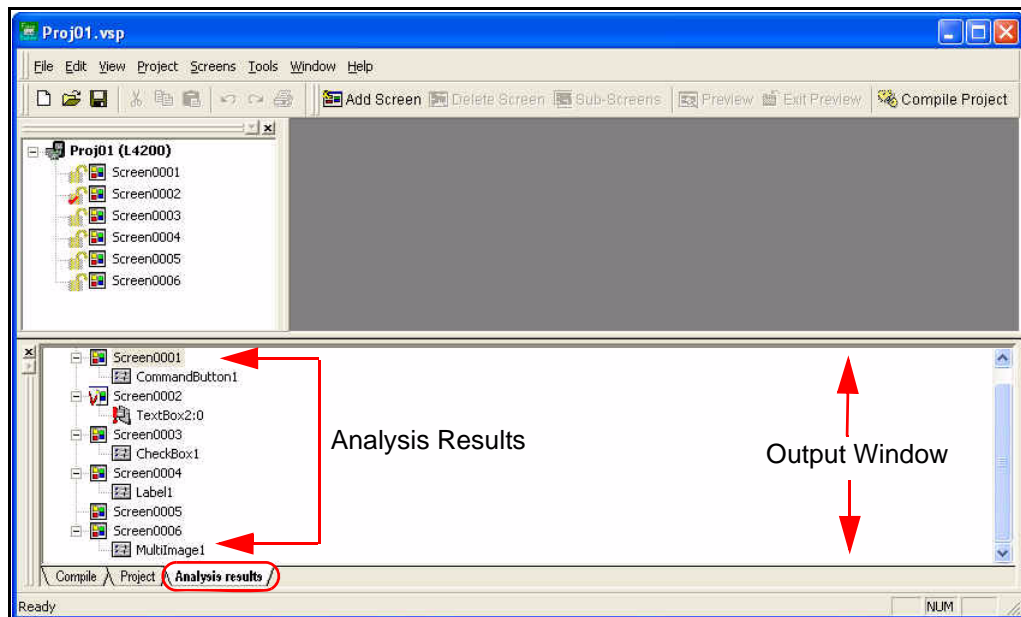
Figure 2-67   *Analysis Results Window*

OR

To analyze screens on startup each time FormBuilder is executed:

1. Select **Tools > Settings** and click the **General** tab if it is not already selected. A dialog box similar to the following displays:
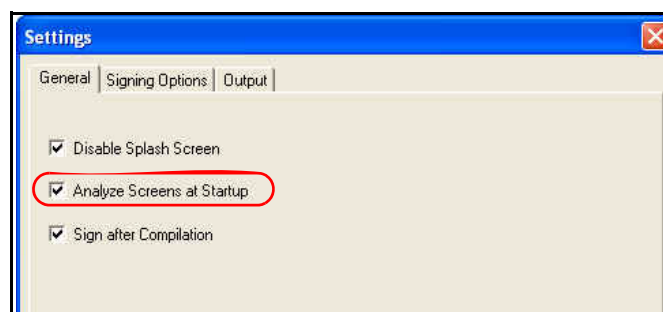
Figure 2-68   *General Tab*

2. Select the **Analyze Screens at Startup** check box.

3. Click **OK**.

    The next time the project is opened, the analysis results are displayed in the Output Window under the **Analysis Results** tab.

Security Features

Introduction

In compliance with Payment Card Industry (PCI) and INTERAC security standards, FormBuilder supports screen security features. FormBuilder security features allow the user to securely sign the project. Symbol suggests that every project be signed.

Signing screens involves generating a digital signature and associating that signature with the project it signs.

> *NOTE*   This FormBuilder version signs the project, not the screens individually. The screens are bundled and the bundle is signed.

A certificate is the public key of a key-pair, combined with information identifying the key's owner and signed by the private key of a certificate authority. A certificate authority is an organization that creates and signs certificates. The signature of the certificate authority provides some guarantee that the public key in the certificate corresponds to the ownership information. A certificate is the online equivalent of an ID card. It can be used to sign files and to verify the origin of a signed file.

During a normal transaction, the system will verify the screen bundle's signature before a screen is displayed to a customer. Should the signature not match, the PIN Pad application will refuse to display a screen. If a screen project is unsigned, certain limitations will be imposed on the screen display, which depend on the Security mode (PCI or INTERAC) defined in the terminal Access Control List (ACL) file and limitations posed by corresponding certifications.

> *IMPORTANT*   This FormBuilder version supports screen signing for PD47XX platforms only.

Signing Options

Before signing the project, you need to place a copy of the Controller Certificate Authority file and the Terminal ACL file into the FormBuilder directory. Both of these files have a **.crt** (security certificate) extension.

Once you have added the Controller Certificate Authority (CA) file and the Terminal ACL file to the FormBuilder directory, verify the security settings in FormBuilder.

To verify the security settings:

1. Open the FormBuilder project.

2. Select **Tools > Settings** and click the **Signing Options** tab. A dialog box similar to the following displays:
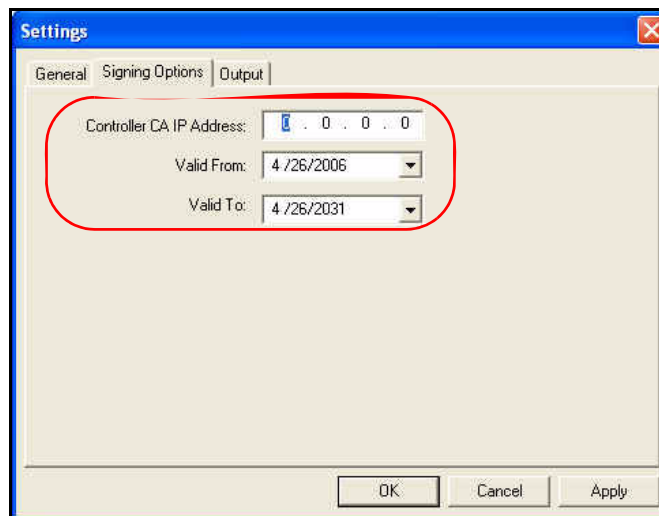
Figure 3-1   *Signing Options Tab*

3. Confirm that the **Controller CA IP address** and **Valid From** and **Valid To** dates are correct.

4. Click **OK**.

Signing a Project

To sign a project:

1. Open the project.

2. Ensure that all screens in the Project File Tree Window are closed.

   ⚡ **WARNING!** **No screens can be opened for editing or preview at this time. Close and re-open the project to clear any open screens from the work window.**

3. Select **Tools > Settings** and click the **General** tab if it is not already selected. A dialog box similar to the following displays:
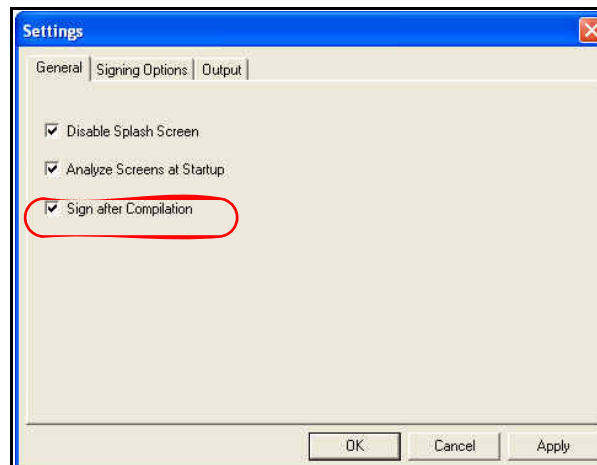
Figure 3-2   *General Tab*

4. Click the **Sign after Compilation** check box.

   ⚠️ *IMPORTANT* The unsigned icons in the Project File Tree Window change to signed icons when you click **Apply** in Step 7 of this procedure, but the screens are not signed until the project is compiled in Step 8 of this procedure. The icons indicate that the signing option has been selected, but not necessarily that the screens have been signed.

5. To view the screen analysis results in the Output Window, click the **Analyze Screens at Startup** check box.

6. From this tab you can also choose whether or not to disable the splash screen that opens before FormBuilder's main screen. To disable the FormBuilder splash screen, click the **Disable Splash Screen** check box.

7. Click **Apply**.

8. Click **Compile Project**.

   ✓ *NOTE* When project screens are signed, subscreens are also signed. Project tree icons with red checkmarks indicate potential violation requirements.

Revoking a Project Signature

To revoke a signature:

1. From the open project, select **Tools > Settings** and click the **General** tab if it is not already selected. A dialog box similar to the following displays:
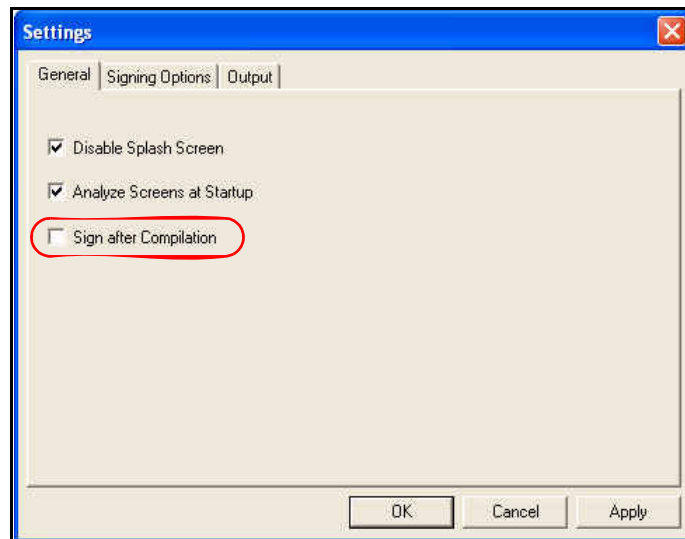
Figure 3-3   *General Tab*

2. Uncheck the **Sign after Compilation** check box. The signed icons in the Project File Tree Window change to unsigned icons.

> ⚠️ **IMPORTANT** The signed icons in the Project File Tree Window change to unsigned icons when you click Apply in Step 3 of this procedure, but the signatures are not revoked until the project is compiled in Step 4 of this procedure. The icons indicate that the signing option has been unchecked, but not necessarily that the screens have been revoked.

3. Click **Apply**.
4. Click **Compile Project**.

Security Icons

Security icons in the Project File Tree Window and the Output window show whether screen or subscreen elements are signed or unsigned and whether they potentially violate Visa PED certification requirements.
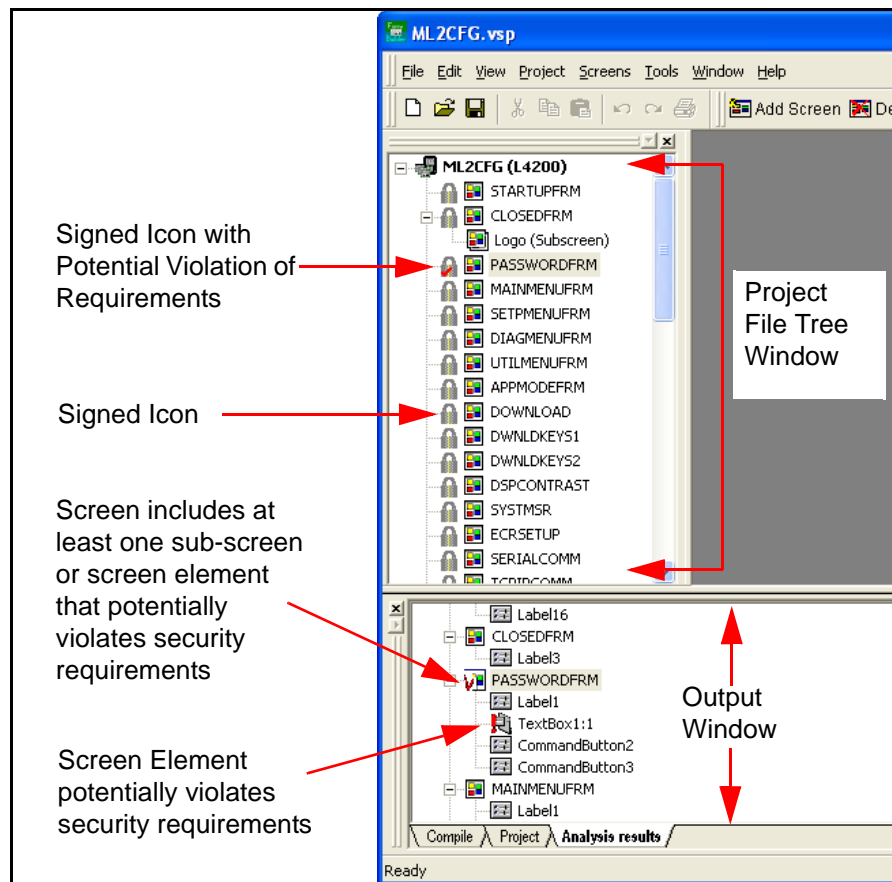
Figure 3-4   *Security Icons in Project File Tree Window and Output Window*

Signed Icon

The signed icon is shown in *Figure 3-5*. The screens that display this icon to their left in the Project File Tree Window have been signed.
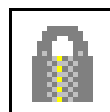
Figure 3-5   *Signed Icon*

Unsigned Icon

The unsigned icon is shown in *Figure 3-6*. The screens that display this icon to their left in the Project File Tree Window have not been signed.
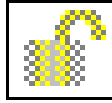
Figure 3-6   *Unsigned Icon*

Signed Icon with Potential Violation of Requirements

The signed icon with potential violation of Visa PED security standards is shown in *Figure 3-7*. The screens that display this icon to their left in the Project File Tree Window have been signed but screen elements may not meet Visa PED security standards.
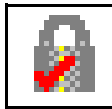
Figure 3-7   *Signed Icon with Potential Violation of Requirements*

Unsigned Icon with Potential Violation of Requirements

The unsigned icon with potential violation of Visa PED security standards is shown in *Figure 3-8*. The screens that display this icon to their left in the Project File Tree Window have not been signed and screen elements may not meet Visa PED security standards.

Figure 3-8   *Unsigned Icon with Potential Violation of Requirements*

Screen Summary Icon

A screen summary icon summarizes the security state of all screen elements within a given screen. If there is no potential violation of requirements, the icon for a screen summary is shown in *Figure 3-9*. All of the screen elements within the screens that display this icon to their left in the Output Window meet Visa PED security standards.
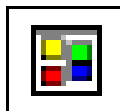
Figure 3-9   *Screen Summary Icon*

Screen Summary Icon with Potential Violation of Requirements

The screen summary icon with potential violation of Visa PED security standards is shown in *Figure 3-10*. At least one of the screen elements within the screens that display this icon to their left in the Output Window fail to meet Visa PED security standards.
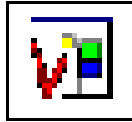
Figure 3-10   *Screen Summary Icon with Potential Violation of Requirements*

Screen Element Icon

If there is no potential violation of security requirements, the icon for each screen element is shown in *Figure 3-11*. Screen elements that display this icon to their left in the Output Window meet Visa PED security standards.
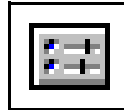
Figure 3-11   *Screen Element Icon*

Screen Element Icon with Potential Violation of Requirements

The screen element icon with potential violation of Visa PED security standards is shown in *Figure 3-8*. Screen elements that display this icon to their left in the Output Window may not meet Visa PED security standards.
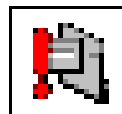
Figure 3-12   *Screen Element Icon with Potential Violation of Requirements*

Reference Information

Introduction

This chapter provides reference information used by the developers of the base application programs. Information provided includes any variations on the screen output files, including variations on the use of the files.

Output File Name

The screen builder creates and uses a set of files. The packinglist is used to support the download of files to the terminal, each file that a terminal receives is named in the packinglist file.

The primary working files for any given project are a "vsp" file and one or more screen files. The vsp file contains general information about the screen project. The screen files contain information specific to the individual screens. Other files associated with the development of the screens may include graphic files that are included within the screens. These are called "img" files.

The compilation process produces an "scb" file, a packinglist file, and various "pcx" files. The "scb" file contains information the terminal application program uses to display the screens. The location of the various components and the names of the "pcx" files are included. The "pcx" files contain the screen images. If the packinglist has been signed, a "tcms" file is included. The packinglist also contains the names of the completed output files.

Packinglist

When a FormBuilder project is compiled, a packinglist is created or updated and placed in the DL (download) folder. The packinglist consists of a version number, an SCB file, an IMG and a Font file.

NOTE Some packing lists may not have IMG files. An SCB file is typically listed.

FPE uses the packinglist information to determine which files need to be requested from the host PC.

Symbol provides a general packinglist for users. The user may choose to create a custom packinglist. Please contact your Client Services Manager for more information on a custom packinglist.

Sample Packing List

The following is a sample of what is contained in a packinglist

- project.tcms
- 0452
- 6KIMG.scb/98
- picture.img/3925

Sample Packing List Components Definitions

Table A-1   *Sample Packing List Components Definitions*

Components	Definition
project.tcms	**project** is the name of the project. **tcms** extension indicates the packinglist has been signed.
0452	**0452** is the version number of the packinglist.
6KIMG.scb/98	**6KMIG.scb** is the name of the scb file. **98** is the size of the scb file.
picture.pcx/3925	**picture** is the name of the pcx file. **3925** is the size of the pcx file.

Command Button

Property Descriptions

Table A-2   *Command Button Property Descriptions*

Property	Description
Button Type	Selects what appears on the button, Text or Picture.
Caption	Text that appears on the button when Button Type Text is selected.
Up Picture	Picture that appears on the button when Button Type Picture is selected.
Down Picture	Used to show the button in the pressed state.
Return Key	Assigns a value from the pull-down list that is used by the terminal application when the button is in the pressed state. The value is provided to the terminal application in the Screen Definition Language. Command Buttons on the same screen must use different Return Keys. When a PIN or Signature type screen has a Done or Enter command button, the Command Button Return Key selection must be set to **Done**.
VirtKbdChar	Creates a virtual keyboard on the screen. Virtual keyboard is supported on all platforms. It can be used to enter text, digits, and PINs. There are three types of virtual keyboards, alpha, alpha-numeric, and numeric. Fonts are selected from the list of available fonts.
Fn Key Mapping	Assigns values for function key mapping: Left - 1, Left - 2, Left - 3, Right - 1, Right - 2, Right - 3
Transparent	True or False.
ForeColor	Color of text on button when BTNType Text is selected. Pull-down list contains all available colors.
BackColor	Color of button background when BTNType Text is selected. Pull-down list contains all available colors.
Font	Font size in pixels of the button caption. Available font sizes are 10x18, 5x7, 6x12, 6x8, and 8x9. Some fonts are not available on some terminals. Soft Font: Hyperfont is required to create font files (.hfonts). Font file is added to a project by using the "Insert Font". The font file used is not shown in FormBuilder, but is displayed on the device screen.
X	Number of pixels from the left side of the screen to the left edge of the button.
Y	Number of pixels from the top of the screen, to the top edge of the button.
Width	Width of button in pixels.
Height	Height of button in pixels.

Return Key Codes

Table A-3   *Command Button Return Key Codes*

Command Button Return Key Codes	Transaction Type	Message Type	Tender Type
Backspace			
Cancel		Q	0X51
Clear			0X1B
Done			0X01
Next Field			
FuncKey1	Credit	A	0X41
FuncKey2	Debit	B	0X42
FuncKey3	EBT	C	0X43
FuncKey4	EBT Food Stamps	D	0X44
FuncKey5	EBT Cash Benefits	E	0X45
FuncKey6	Check	F	0X46
FuncKey7	User 1	G	0X47
FuncKey8	User 2	H	0X48
FuncKey9	User 3	I	0X49
FuncKey10	User 4	J	0X4A
ScreenMenu1		K	0X4B
ScreenMenu2		L	0X4C
ScreenMenu3		M	0X4D
ScreenMenu4		N	0X4E
ScreenMenu5		O	0X4F
ScreenMenu6		P	0X50
VirtualKdb			
Scroll Pole Up			
Scroll Pole Down			
ADA Pin Entry			

Label Property Descriptions

Table A-4   *Label Property Descriptions*

Property	Description
Caption	Static text that appears on the Label.
Transparent	True or False.
ForeColor	Color of caption text on Label. Pull-down list contains all available colors.
BackColor	Color of Label background. Pull-down list contains all available colors.
Font	Font size in pixels of the Label caption. Available font sizes are 10x18, 5x7, 6x12, 6x8, and 8x9. Some fonts are not available on some terminals. Soft Font: Hyperfont is required to create font files. (.hfonts). Font files are added to a project by using the "Insert Font". The font file used are not shown in FormBuilder, but are displayed on the device screen.
X	Number of pixels from the left side of the screen to the left edge of the Label.
Y	Number of pixels from the top of the screen, to the top edge of the Label.
Width	Width of Label in pixels.
Height	Height of Label in pixels.

Text Box Property Box Descriptions

Table A-5 *Text Box Property Box Descriptions*

Property	Description
MaxLength	Maximum number of characters that can be displayed on the Text Box. Range is 0 to 99.
MinLength	Minimum number of characters that can be displayed on the Text Box. Range is 0 to 99.
Field Type	Type of information entry required by the terminal user. Selections are: **PIN Entry** - used only with Personal Identification Number (PIN). The application program developer determines the PIN type. **Numeric Entry** - numeric only information is entered. **Alphanumeric Entry** - alphanumeric information is entered. **Amount Entry** - cashback amount is entered. **Signature Entry** - used only with signature capture. The terminal user writes their name in the box so it can be captured for a transaction type that requires a signature. Signature Capture properties must be determined by the application developer. **Masked Entry** - allows entered digits to be displayed as asterisks('*') on the terminal display, such as a PIN entry. Masked entry does not encrypt the content, but sends it clear to ECR in FormResponse. **Date** - allows selection of date format and separator type. **SSN** - allows user to enter a social security number. **Phone** - allows user to enter a phone number. **Custom** - allows user to specify a custom format for an edit field.
Integrated Element	True indicates that the Text Box is contained directly in the compiled screen file. False indicates that the Text Box is called as an attachment to the screen file. The default is True.
ForeColor	Color of text on the Text Box. Pull-down list contains all available colors.
BackColor	Color of Text Box background. Pull-down list contains all available colors.
Font	Font size in pixels of text on the Text Box. Available font sizes are 10x18, 5x7, 6x12, 6x8, and 8x9. Some fonts are not available on some terminals. Soft Font: Hyperfont is required to create font files. (.hfonts). Font files are added to a project by using the "Insert Font". The font file used are not shown in FormBuilder, but are displayed on the device screen.
X	Number of pixels from the left side of the screen to the left edge of the Text Box.
Y	Number of pixels from the top of the screen, to the top edge of the Text Box.
Width	Width of Text Box in pixels.
Height	Height of Text Box in pixels.

Check Box Property Box Descriptions

Table A-6   *Check Box Property Box Descriptions*

Property	Description
Caption	Text that appears on the box.
Checked	True sets the box checked, or enabled. Default is False (not checked).
Transparent	True or False.
ForeColor	Color of text on box. Pull-down list contains all available colors.
BackColor	Color of box background. Pull-down list contains all available colors.
Font	Font size in pixels of the box caption. Available font sizes are 10x18, 5x7, 6x12, 6x8, and 8x9. All font sizes are not available on all devices. Soft Font: Hyperfont is required to create font files (.hfonts). Font file is added to a project by using the "Insert Font". The font file used is not shown in FormBuilder, but is displayed on the device screen.
X	Number of pixels from the left side of the screen to the left edge of the box.
Y	Number of pixels from the top of the screen, to the top edge of the box.
Width	Width of box in pixels.
Height	Height of box in pixels.

Image Property Descriptions

Table A-7   *Image Property Descriptions*

Property	Description
Picture	Image that appears in the Picture Box. Use the browse feature to locate and select the image.
X	Number of pixels from the left side of the screen to the left edge of the button.
Y	Number of pixels from the top of the screen, to the top edge of the button.
Width	Width of Image Box in pixels.
Height	Height of Image Box in pixels.
Image in Dump	True indicates that the Image Box is contained directly in the compiled screen file. False indicates that the Image Box is called as an attachment to the screen file. The decision whether or not to embed the Image Box is made by the application program developer and selected here. Default is True.

Multi-Image Property Descriptions

Table A-8   *Multi-Image Property Descriptions*

Property	Description
Rotation Delay	Number of seconds each image appears on the screen. Default delay is 3 seconds. To stop image sequencing, set delay to 0.
Picture1-9	Image that appears in the Multi-Image Box. Use the browse feature to locate and select the image.
X	Number of pixels from the left side of the screen to the left edge of the box.
Y	Number of pixels from the top of the screen, to the top edge of the box.
Width	Width of box in pixels.
Height	Height of box in pixels.

Option Button Property Descriptions

Table A-9   *Option Button Property Descriptions*

Field Name	Length	Description
Caption	51	The text to display (max 50 chars + 1 NULL). This field is padded with NULLs to a length of 51 characters.
Group	3	Group number to which this radio button belongs (0x01 - 0xFE, if set; otherwise 0xFF)
Index	1	Index of the radio button within the group
Checked	1	Flag indicating if the radio button is selected or not
Transparent		True or False
Fore Color	3	The foreground color for the element
Back Color	3	The background color for the element
Font	1	The main font to use for the element
X	3	X position of the element
Y	3	Y position of the element
Width	3	Width of the element
Height	3	Height of the element

Virtual Keyboard Property Descriptions

Table A-10   *Virtual Keyboard Property Descriptions*

Field Name	Length	Description
Keyboard Type	3	Alpha, Alpha-numeric, or Numeric.
Fore Color	3	The foreground color for the element.
Back Color	3	The background color for the element.
Font	1	The main font to use for the element.
X	54	X position of the element.
Y	3	Y position of the element.
Width	3	Width of the element.
Height	1	Height of the element.

List Box Property Descriptions

Table A-11   *Virtual Keyboard Property Descriptions*

Field Name	Description
Control Id	List Box identification number (1-999).
Justify	Left, Center, or Right.
Border	Display the List Box with or without a border (True or False). The color of the border will be the same color of the List Box item text (same color as *ForeColor on page A-10*).
Max Items	Maximum number of items in List Box.
Fill	This property configures the position of the last item scanned. The last item can be displayed at the bottom or at the top. (Bottom or Top).
StepScrolling	Number of lines per step when scrolling List Box items. On devices without a touch screen, it is the function key associated with the corresponding navigation button in StepUpButton and StepDown Button properties.
StepUpButton	Used to associate List Box navigation buttons to the function keys used for scrolling up on PD4700 terminals. (Left - 1, Left - 2, Left - 3, Right - 1, Right - 2, Right - 3)
StepDownButton	Used to associate List Box navigation buttons to the function keys used for scrolling down on PD4700 terminals. (Left - 1, Left - 2, Left - 3, Right - 1, Right - 2, Right - 3)
Transparent	True or False.
PageScrolling	Used to designate the number of pages to scroll up or down on PD87xx terminals.

Table A-11   *Virtual Keyboard Property Descriptions (Continued)*

Field Name	Description
ForeColor	Foreground color for the List Box.
BackColor	Background color for the List Box.
Font	Main font to use for the List Box.
X	X position of the List Box.
Y	Y position of the List Box.
Width	Width of the List Box in pixels.
Height	Height of the List Box in pixels.

Pre-Defined Screen Names

The following screen names must be used depending on the software you are using to download the file to your terminals.

FPE Screen Names

Since the FPE application passes the screen name as one of its parameters, almost any screen name can be used. There are, however, a few exceptions. The following table illustrates the pre-defined screen names that must be used.

Table A-12 *FPE Screen Names*

Screen Name	Description
CLOSEDFRM	Will display at start up in a closed state.
BADSWIPE	Will display when a card read error occurs.
FREQSHPFRM	Customer Activated Mode (CAM) frequent shopper card form.
GETTENDFRM	The tender selection screen in CAM.
WAITFRM	Screen displays "Please Wait" in CAM.
CBYNFRM	Cash back prompt in CAM.

SCAT Screen Names

Table A-13 *SCAT Screen Names*

Screen Name	Description
CBYNFRM	Cash back prompt.
CBBUTTFRM	Cash back buttons.
SWIPEFRM	MSR screen to swipe a card.
AMNTFRM	Prompts to confirm amount.
PINFWCR	Prompts to enter a PIN with credit button.
PINFRM	Prompts to enter PIN with debit button.
GETTENFRM	Prompts tender type selection.
YNFRM	Yes/No prompt screen selection.
NUMRFRM	Numeric entry screen.
ALFAFRM	The alpha entry screen.
1KEYFRM	The press one key screen.
LANGFRM	The language selection screen.
PURBALFRM	The purchase/balance choice screen.
CLOSEDFRM	Displays the closed state when the ECR is closed.
SELECTACC	The select account form screen.
SELECTEBT	The select EBT form screen.
SIGNATURE	The signature capture screen.
TENPROMPT	Tender type prompt screen.
WAITFRM	The "Please Wait" screen.

EFT Screen Names

Table A-14 *EFT Screen Names*

PD8700	PD4700 Signed	PD4700 Unsigned	PD4750 Signed	PD4750 Unsigned
back	bggp	bggp	bggp	bggp
EFTSELACC	bggp1	bggp1	bggpc	bggpc
EFTAMNTOK	bgg2	bgg2	EFTCLOSED	EFTCLOSED
EFTCARDER	bggpc	bggpc	EFTSLIDE	EFTSLIDE
EFTCBPROM	EFTCLOSED	EFTCLOSED	EFTPTYPE	EFTPTYPE
EFTCOMPLD	EFTSLIDE	EFTSLIDE	EFTENTPIN	EFTENTPIN

Table A-14   *EFT Screen Names (Continued)*

PD8700	PD4700 Signed	PD4700 Unsigned	PD4750 Signed	PD4750 Unsigned
EFTENTPIN	EFTPTYPE	EFTPTYPE	EFTAMNTOK	EFTAMNTOK
EFTCLOSED	EFTENTPIN	EFTENDPIN	EFTPROCS	EFTPROCS
EFTOVRCB	EFTAMNTOK	EFTAMNTOK	EFTCOMPLD	EFTCOMPLD
EFTWAIT	EFTPROCS	EFTPROCS	EFTREPIN	EFTREPIN
EFTPROCS	EFTCOMPLD	EFTCOMPLD	EFTWAIT	EFTWAIT
EFTREFOK	ETREPIN	ETREPIN	EFTREFOK	EFTREFOK
EFTSELLAN	EFTWAIT	EFTWAIT	EFTNWAMNT	EFTNWAMNT
EFTSIGCAP	EFTREFOK	EFTREFOK	EFTSELACC	EFTSELACC
EFTSLIDE	EFTNWAMNT	EFTNWAMNT	EFTCARDER	EFTCARDER
EFTTRANCAN	EFTSELACC	EFTSELACC	EFTTRANCAN	EFTTRANCAN
EFTPTYPE	EFTCARDER	EFTCARDER	EFTSELLANG	EFTSELLANG
EFTDEFAULT	EFTRANCAN	EFTRANCAN	EFTSIGCAP	EFTSIGCAP
backkb	EFTSELLANG	EFTSELLANG	EFTOVRCB	EFTOVRCB
EFTCBAMNT	EFTOVRCB	EFTOVRCB	EFTCBPROM	EFTCBPROM
EFTNWAMNT	EFTCBPROM	EFTCBPROM	EFTCBAMNT	EFTCBAMNT
EFTREPIN	EFTCBAMNT	EFTCBAMNT	EFTDEFAULT	EFTDEFAULT
	EFTDEFAULT	EFTDEFAULT		
	bggp3	bggp3		

Screen Names to Avoid

The terminal uses certain screen names internally, and using them could cause a conflict. Avoid using the following names for your screens:

✓ **NOTE** If you must use one of these names, try to alter it slightly to avoid internal terminal conflicts

```
APPMODEFRM
APPSTRM1
APPSTRM2
CALIBRFRM
CLOSEDFRM
CONNECTECR
CONNECTECR2
CONNECTFRM
dl
DOWNLOAD
DSPCONTRAST
DUKPTNEW2
DUKPTNEW3
DWNLDKEYS1
DWNLDKEYS2
ETHERNETFRM
EXCEPTLOG
EXTERNPINPD
FILEBROWSE
HWCONFIG
KEYPADFRM
MSENCNEW
MSENCNEW2
MSENCNEW3
MSENCTEST
MSRTEST
NETSETUP
PLDOWNLOAD
PPPFRM
SERIALCOMM
SERIALCOMM2
STARTUPFAIL
STARTUPFRM
SYSMSGFRM
SYSTMSR
TCPIPCOMM
TERMSETUP
ECRSETUP
DUKPTNEW
```

Windows Registry Entries

The following are the default and typical entries in the Windows Registry. These entries are to be used by the developers of the base application programs.

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder]

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder\Current]

"TerminalType"="L4100"

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder\Recent File List]

"File1"="C:\ Program Files\Form Builder\Projects\ \hello\ \hello.vsp"

"File2"="C:\ Program Files\Form Builder\Projects\ \SB Demo\ \SB Demo.vsp"

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder\Run Time]

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder\SDF]

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder\Settings]

"ProjectDir"="C:\Program Files\Form Builder\Projects"

"SCREENDUMP"="YES"

"VersionsSCB"="dword:0X00000000(0)"

"VersionTermSubType"="dword:0X00000000(0)"

"VersionPackingList"="dword:0X000000c9(201)"

[HKEY_CURRENT_USER\Software\Hypercom\Form Builder\ToolBox]

"Tool04"="{D7053240-CE69-11CDA777-00DD01143C57}"

"Tool01"="{4C599241-6926-101B-9992-00000B65C6F9}"

"Tool02"="{978C9E23-D4B0-11CE-BF2D-00AA003F40D0}"

"Tool4"="{346685E3-C383-11CF-A5A4-00AA00A45705}"

"Tool6"="{8BD21D10-EC42-11CE-9E0D-00AA006002F3}"

[HKEY_CURRENT_USER\Software\Hypercom\POS Builder\UiMetrics]

C

Compiler. The function of packaging the completed project for download to terminals.

E

Elements . - This terms applies to any object added to a screen. Also referred to as screen element(s).

F

FPE32. - Symbol's proprietary software.

I

Images. Can be referred to as graphics.

O

Output Window. - The section of the FormBuilder application that displays necessary data about a project.

P

Packing List . On compilation, FormBuilder creates a packinglist that is then downloaded to the terminals.

Project . - General name used to refer to a group or series of screens created in FormBuilder.

Project File Tree. - The section of the FormBuilder application that displays each screen in a project. Double clicking on a screen name displays that screen in the Work Window.

Property Box. This is accessed by double clicking on a screen element. In the Property Box changes to the element are made.

R

Return Keys. The key code commands assigned to screen elements.

S

Screen. - This term can be used to refer to either computer or terminals screens created using FormBuilder.

T

Toolbox . This is a floating palette of options that can be moved around the FormBuilder application. The toolbox contains common elements used in building screens.

W

Work Window. - The FormBuilder program is divided into window frames. The Work Window is the section of the application where you add images, boxes, and text.